

# BOARDWATCH

## MAGAZINE

**Guide to Online Information Services and Electronic Bulletin Boards**

## The National Information Infrastructure

## **Clinton and Gore Release Their Blueprint for a Future Online**

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## ***Ted Kennedy***

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\*\*\*\*\*MIXED CTY 80501 Comp limentary S985 1 Chris Anderson



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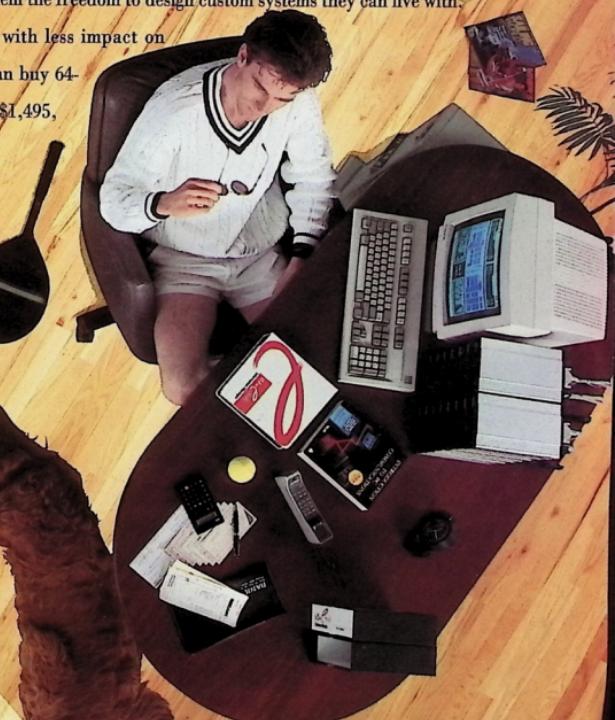
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November 1993



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# What Can You Do with the Open

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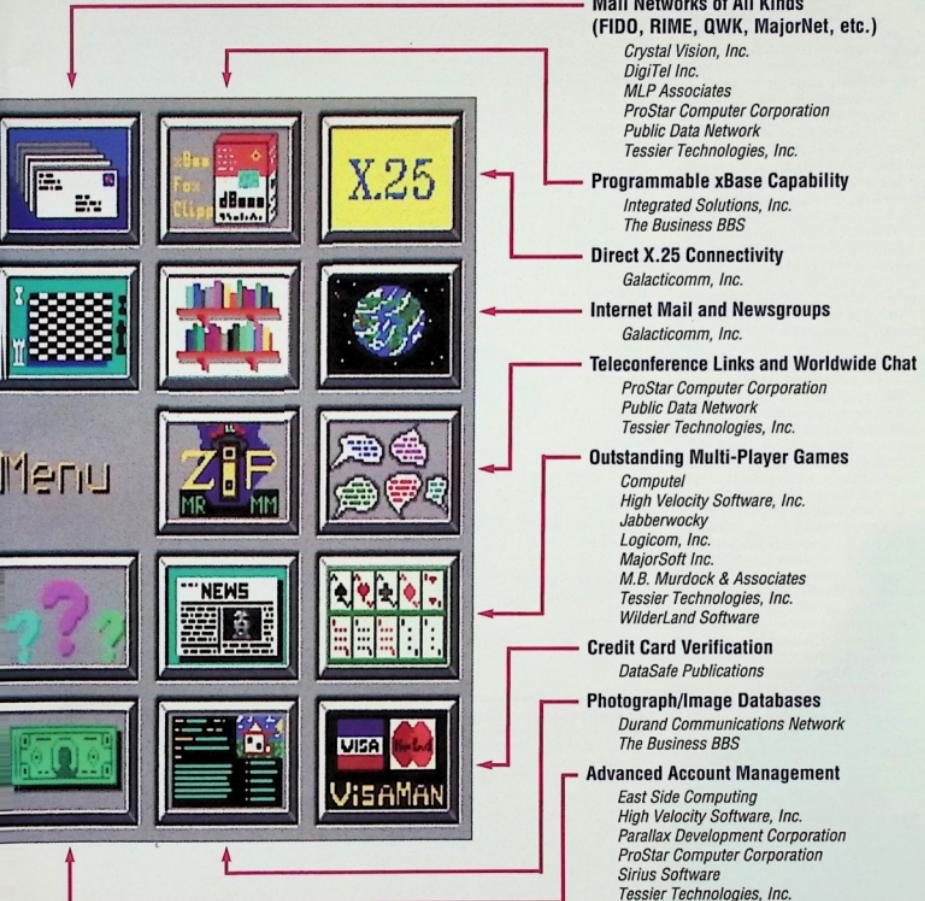
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# EDITOR'S NOTES

## ONE MAN - ONE VOTE - ONE PROGRAM

The National Information Infrastructure: Agenda for Action document was released September 12 and made available to the online community in full ascii text form the same day. This document outlines the administration's blueprint for a future national data highway. We don't normally devote nine pages of Boardwatch to publishing government literature. But, while the document is easily available electronically, this will probably affect everyone online at some point or another. You will undoubtedly see it quoted and analyzed in coming months, but I'm going to guess the full text is not going to be carried widely in print. So we decided to run the whole thing - albeit as "the fine print."

The NII Agenda is remarkable in that they did manage to assemble every cliché in the free world regarding online communications and actually pile them all into one document. As government detritus goes, it is actually quite readable. A persistent, if effete segment of the online community has campaigned for some time for government to "get involved" online. They parade across Washington in a continuous stream attempting to get our government to fund various notions of what they want the online world to look like.

And in some areas, government participation in the online process has been productive. The National Science Foundation has devoted a relatively modest amount of public investment in the Internet and this money has leveraged a hundred times that much private investment in the technology. I agree, there is a role for government in the future network.

But in the context of the other things this administration is trying to do, I originally approached this topic with some trepidation. These people have no moral qualms whatsoever in saying one thing and doing quite another. The concepts of truth and lies and right and wrong are foreign to their view of the way the world works. The action items regarding encryption and copyright law revision are worded innocently enough. Beneath those words I detect an agenda more in keeping

with the current health care program proposal, the budget recently passed, a corps of youth working for the government, the addition of 50,000 police officers on a national basis, and an entire political agenda focused quite single mindedly on one thing - control of the population - at all levels and in areas American's just aren't accustomed to thinking of as something anyone would want to control.

This document does refer to legislation that would open the local telephone loop to competition - a concept we first came out for in 1988. The legislation they refer to basically frees the local telephone companies to provide video, information, long distance services - it has little to do with competition in the local loop



other than to provide these telephone companies precisely what they've been lobbying for - freedom to exploit their monopolies on the local line infrastructure. The players are cable tv companies and telephone companies. Six months ago telco U.S. West purchased 25% of Time Warner, and this past week, Bell Atlantic and TCI, the nation's largest cable company holding group, announced a complete merger. The standoff between cable companies and telephone companies is over - and there will be LESS competition, not more. The inside deal making all of this work is that the government becomes a "partner" in developing our telecommunications infrastructure - the "controlling" influence.

The more pressing current concern is encryption and privacy. The administration rolled out the Clipper Chip proposal earlier this year as a toe in the water. Clinton apologists are quick to point out that this was a Bush administration proposal. Poppycock. There are thousands of proposals making the rounds in Washington in a continuous cloud - the plankton of the political seascape. A relative handful ever see the light of day. This one, given little chance under the Bush administration, did under President Clinton.

The Clipper Chip concept is a bit startling. Everyone gets to encrypt their data, and in fact are encouraged to do so - with the government holding the decryption keys. I can't separate the stupid from those accused of stupid here, so I'll just note that it was proposed, and is still pursued. But they do apparently feel it important that if anyone has any "secret stuff", the government should, as a matter of course, have access to it. You have no "right" to privacy - quite the contrary.

In health care, before it is over, if you want health care coverage, it will only be available in ONE place - a government office. You will present yourself in person, along with a little basket of receipts showing you've paid your taxes, registered for the draft, the national service program, given blood, quit smoking, have exercised regularly, have your car insurance in order, your driver's license, social security receipt, and anything else necessary to "make us safe." And if all your papers are in order, and you pay the fees, you will receive a little plastic card allowing you to visit a doctor or clinic. George Orwell never had it so good.

And I would fear this same socialist greed for control of our lives will be applied to the online community via this National Information Infrastructure. I would, but I don't, and I'm feeling particularly enchanted right now by why I don't.

First, they can be counted on to be as buffoonish about it as possible given the laws of physics. Currently, the State Department is actually pursuing a lone Boulder programmer with a Grand Jury investigation of possible infraction of export controls - alleging that he illegally exported a data encryption program - Pretty

Good Privacy. The farce is of course that he never left Boulder. He posted it on a couple of local Internet sites, and of course, within about 12 minutes it was all over the world. It allows anyone to encrypt e-mail messages in such a fashion that all the kings horses and all the kings men can't figure out what the hell you said in it on a bet.

And this is the heartening jewel. The online world has always moved powerfully toward the least common denominator grass roots end of the electronic path. All things that have grown have grown DOWN toward the end user, not UP toward a central authority. The entire energy in the online explosion has been OUT and DOWN and many of the innovations have been to extend functionality to the least equipment, at the least cost, in a never ending quest for "free" and something I can run on my OWN computer. The natural conclusion of this will be instant worldwide communication from a handheld \$4 pocket calculator.

The Internet is fascinating in that it is a belief system that allows people to connect to a common backbone for communications. That was the part we needed. Something persuasively "in the middle." But it was ALL we needed. There are now 130 million personal computers out there. And some percentage of these people are Phil Zimmermanns. This one man, with one wee little Borland compiler, wrote a piece of software. And whether they prosecute him to make him an example or not, he released ONE program in the wee hours of the morning in 1991, that will never allow the government or anyone else to put the data encryption genie back in the bottle. It did not change the world. It demonstrated that the world had changed. It's free. It's everywhere. There is no way to track down all the copies in all the world. It transcends national boundaries. He did it for the notoriety - and he got it. But he could just as easily done it anonymously. An avowed leftist himself, he really gets just as bristley as Pat Buchanan from the far right on this thing about government control of individuals. And he's not alone.

Whatever elaborate systems are contrived, at the cost of billions of dollars, with the full collusion of giant corporate telco/cable entities controlling vast territories of fiber-glass and copper, they will become symbols of vanity - towers of Babel standing in testimony to the futility

of trying to use electronics to control people. Electronics is a good material for building freedom, and a most notably poor one for forging chains. Wherever there is one guy with an attitude, a compiler, and a few free afternoons, all the plans and all the plots of all the kings go awry with a single program release.

We have lots of guys with attitudes, lots of compilers, and lots of afternoons.

Let them build the NII. Let us use it without fear. With a handful of Zimmermanns, we can remake the world to suit us.

Now, if only we could get Phil to compile us a health care program....

Jack Rickard  
Editor Rotundus

P.S. Mr. Zimmermann, guilty, innocent, free, or jailed, will undoubtedly incur the usual mountain of legal fees - poor thanks for his contribution. It might just serve an interesting purpose to make a numeric show of force on his behalf to demonstrate that the usual economic coercion won't work either. Stick a lone dollar bill in an envelope and send it to his legal defense fund. For a buck twenty-nine, it's a cheap political statement. And if enough of us do it, maybe the world will change again.

Phil Zimmermann Legal Defense Fund  
c/o Philip Dubois, Esq.  
2305 Broadway  
Boulder, CO 80304

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## LETTERS TO THE EDITOR

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Address correspondence to Letters to The Editor, Boardwatch Magazine, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123, letters@boardwatch.com, letters at 1:10/4555, or by fax to (303)973-3731.

Dear Jack:

I enjoy your magazine well enough to have become a recent subscriber — where's that first issue, anyway? — so I guess that makes me by definition one of Your Favorite People. But I had to respond to you and to the letter in September from Roy

"Get a Life" Batchelor regarding the picture of Jim "Come To Where The Flavor Is" Thompson in his Marlboro hat and shirt.

I'm a fairly rabid anti-smoker myself, but I don't recall taking offense at that picture. Marlboro should be commended for pumping some of its huge profits into enterprises like the Racing News that are less of a threat to the public health than cigarettes are.

To answer your question, the only thing wrong with selling cigarettes is the 400,000 to 500,000 people who die every year because of them, just in this country. It should be obvious that the only reason a cigarette company puts its name on hats and T-shirts is as part of a larger effort to replace its rapidly dying-off customer base.

If I were you, I don't think I'd care to be a party to that, but as a smoker yourself I can understand your reluctance to admit that there's anything "wrong" about charging customers for a product that'll eventually kill them long before their time.

However, one of the nicest things about BBSing is that it's possible to associate with all kinds of people, including smokers, without the drawbacks involved with actually being in the same room with them. I'm sure you're aware that others may not always welcome your smoke, but to profess to be ignorant of the many costs and consequences of smoking makes you appear to be willfully ignorant, which I'm sure you are not. Just as I'm sure you don't really hope that American Tobacco succeeds in selling their product to children.

I applaud your resolve to publish whatever you like in your fine magazine — I've certainly enjoyed the results so far — but to climb into the lap of the tobacco industry and pretend that you don't understand why anyone would take offense is just a little bit on the disingenuous side.

With that said, I look forward to enjoying my next two years as a subscriber, and I do wish you all the luck in the world — at two packs a day, you're gonna need it. And in



case you're wondering: if I could DOWNLOAD a life, I'd have gotten one by now.

Mark Smith  
mark.smith@mtask.omahug.org

Mark:

*Indeed you are. The question that keeps coming up is why? If you find cigarette smoking "dangerous" and choose to avoid it, I find that perfectly rational. But your letter, and the one I responded to, have nothing to do with smoking, have nothing to do with death - they have to do with control. To be a "rabid anti-smoker" you have to assume that you know best what is best for everyone, and that you somehow have a right to dictate whether others smoke or not, whether the "wicked" tobacco industry can sell their product or not, and in most cases, even what can be discussed and in what manner.*

*For whatever reason, a specific segment of our population wants to control everyone else - in large ways or small. I oppose them. And it is my opinion that you can pretty much pick out the sub-70 IQs by noting those who deal primarily in labels, symbols, and control issues. It makes for a world simple enough for them to grasp. I view such individuals as herd animals best avoided by sentients.*

*The entire debate over smoking has NOTHING to do with mortality. If it did, we would be having similar discussions about automobiles - a product "responsible" under the same rationale for easily as many real deaths as actual mortality from diseases linked to cigarette smoking. Yet you do not advocate censuring automobile manufacturers. Electricity causes a number of accidental deaths in this country each year, but you don't advocate any similar control of public utility companies. So the damage done by cigarettes simply isn't the issue. You don't smoke, and to feel justified and morally superior thereby you feel within your rights decreeing that no one else should either.*

*I don't profess ignorance of the costs and consequences of smoking. I profess that it is not up to you to decree how I or anyone else choose to deal with them, and that they have nothing to do with this apparently irresistible desire some have to control the lives of others. I don't encourage the tobacco companies to sell to children, I advocate a world where they can sell whatever they like to whomever they*

*like without benefit of my bulbous little nose poked into the matter. And I dream of a world where your's isn't either.*

*As you point out, the online community fairly naturally allows each of us some space. But I did dial into an American Lung Society BBS a year or so ago - they specifically requested that I not smoke on their BBS. I hung up and killed the story...the only smoking related death I was aware of at the time.*

Jack Rickard

Jack:

Thank you for printing my letter in the September issue. Some really neat things have happened recently in regards to e-mail to Russia.

After sending you that letter I posted a similar request with PEN, the Planetary Electronic Newsletter (which BTW is now a newsgroup). Coincidentally, I was referred to Arcady G. Khotin by Dave Hughes in Colorado about the same time the September issue of Boardwatch arrived with your suggestion to contact Arcady.

Since then I have established contact with Arcady so that Volodya, our AFS student, is able to contact his parents. We e-mail Volodya's letters to Arcady who then calls Volodya's parents and reads them the message. They in turn send words back to Volodya via Arcady. This in itself is a great situation, but read on...

Last week a girl was at our front door. She introduced herself as a friend of Natasha Davidian. (Natasha was an AFS student at my school last year.) Kate, the girl at the door, is staying in Lee's Summit, where I live, with an American family, and is attending Lee's Summit High School. She and Volodya have become good friends.

Also last week I met a Doctor from St. Petersburg, Andrei Pikalov. He is here in Kansas City doing medical research. We met on ShareNet, a local network for schools in Missouri and Kansas. My wife and I invited he and his family to our house for dinner. We also invited Kate. As Kate and Larisa (Andrei's wife) got to talking they quickly discovered that they are from the same street in St. Petersburg!!

What a small world we live in any-more!!!

Thanks again for your help.

Clear Skies...

Bob Riddle  
<starwalk@delphi.com>

Bob:

*Indeed a small world. Actually, I read a few months back that despite the population, almost everyone on the planet knows everyone else within a string of seven contacts. In other words, someone you know, knows someone else, who knows someone else, etc. I found this remarkable, but on consideration, possible I suppose. It was based on the average number of people any particular person knows, raised to the seventh power, and there was actually quite a bit of room to spare.*

*Similarly, if you do just the base-2 math on parentage, you don't quite have to go back to Adam and Eve to reach the point where we are all blood relatives. The number of people that had to get together 500 years ago and decide to have a baby in order for you to exist today approximately equals the population of the planet at that time.*

*Names have been my latest fascination. I thought Jack Rickard was a fairly unique name. I'm not sure why I thought that since both my father and I had that name out of a nuclear family of seven - I suppose you could say 28% of the entire family had the same name. But while reviewing the PhoneCD product for this issue with its 77 million listings, I found there were enough of us to probably have a modest convention. Names tend to be unique enough to be useful in a world where most of the people you come in contact with are within driving distance. In a world where most of the people you come in contact are within dialing distance, we may find that being David Johnson, Steven Smith or Charles Moore isn't as much fun as it once was.*

*Yet when we discuss the world, five billion inhabitants, and so forth, we all seem curiously unrelated and unconnected. I'm going to guess that more efficient communications afforded by this new technology will make it more apparent how close we all really are. That may be comforting or disturbing, but it will be apparent.*

Glad you made the connection.

Jack Rickard

Dear Jack,

Firstly just a quick note to let you know that as far as I am concerned your magazine outstrips and out performs ANY other BBS publication that I have seen. Although I am down this end of the world on the Southern tip of Africa, I receive your magazine, always within the first 14 days of the month, the office goes kinda crazy trying to get hold of it, but eventually we all get a chance to go through it. All I can say is KEEP IT UP... and keep em rolling in every month.

Well it seems as though BOARDWATCH has done it again. I am referring to your September issue of the magazine, your top 100 BBS contest has given us BBS sysops a great idea. We will be running a similar competition starting from 1st August 1993 - 1st December 1993 to judge the best BBS in Africa. Now as I am sure you are aware this competition (although not on the same scale as your's) will still be a bit of a task to complete. The main reason I am telling you about our competition is two fold. A: We would like to get Boardwatch magazine involved in some way, with the competition. I don't know if you would entertain the idea at all... perhaps sponsor a prize to the top three BBS's - ie: a years free subscription or something, I dont know, or B: Perhaps you would publish the results in your magazine around December 1993 ?

Should you be interested in our competition, please could you let me know - I would then feed you results... etc.

Look forward to your reply,  
Ian Gerada  
ian.gerada@netline.co.za

Ian:

*It is a bit of a task. While as contest administrator you will likely find it somewhat thankless, the African BBS community should benefit thereby. We would certainly encourage it and I would be happy to publish the results in Boardwatch. As to sponsoring a prize, when you do know, let me know, and we'll probably do that too.*

Jack Rickard

Jack:

I'm a newsstand buyer of your interesting magazine - or at least I was. I'm afraid I have to subscribe in

order to be certain that I don't miss an issue. I don't understand why your subscription card, with its prepaid postage, would ever be used by anyone. You can't enclose a check without an envelope (so what good is the free postage?) and why would anyone put his MC/Visa card number & exp. date on a postcard for any casual reader to scarf up & use? Oh well, my check is in the mail...

I was just a little surprised by your response to Nigel Mends in your September issue. Despite the - to use his word - prolix character of his letter, he had at least one thought worth paying attention to: his characterization of your August comments on the topic as having a "wonderful historic and literary scope." Yep. Beyond that, for reasons that would take much more time than it is worth to cover (absent a beer), my own conclusion is that the public schools are paralyzed and, given the general state of the law and society, are unlikely to recover, at least as educational institutions. You are only half-right when you propound your ethos of teacher responsibility. Neither you nor Nigel mentioned a fundamental proposition: it is the responsibility of the student to learn. (Well, maybe you mentioned that in August - I gave my August copy to a friend as an example of worthwhile reading material so I can't check it.) Anyway, despite Nigel's florid prose and hyperbole, what he said was not all wrong. I've had my sons in public school and in private school, and private is better, because the parents are involved, and the government isn't.

Anyway, I enjoyed the exchange, and am interested in anything further you or your readers have to say on this topic - or any other. I think I would read Boardwatch even if I didn't have a computer.

Harmon Dow  
HDow@Delphi.com

Harmon:

*Again, I don't think the problem is the students, or the parents. If a particular student fails to assume his responsibility to "learn", he rather loses. When the success of all students is defined as least common denominator failure, our nation loses. I don't mind the occasional student failing to get an education - tragedy that it might be. But when the standard result of education is the still lingering lack of it, we have a problem. I find it entirely too common for those responsible for our*

*education system to suggest either that it isn't really broke, we just expect to much, or alternatively, that it's really the parents who have screwed things up and "it's not our fault."*

*The existence of a private school system that does more or less educate is most damning. It dehorns the notion that the problem is systemic and intractable. We had a referendum here in Colorado on vouchers for private schools. Over 98% of the funding for the opposition to this ballot initiative came from teacher's unions - sadly enough indicating the true values and principles of our educators. But I think most parents are hesitant to abandon the concept of universal public education because it would rather inevitably lead to exacerbating class distinctions that would grow worse each generation. Horace Mann's concept of public education may have been the most American thing about America over the past 150 years or so. If there is a way to fix it before abandoning it, we should. I understand Bill Clinton's daughter attends a private school, and I fear we'll see a lot more of that as fiscal self interest becomes a survival mode.*

Jack Rickard

Dear Mr. Rickard,

Your vituperative response to Mr. Nigel Mends in the September issue of your magazine, while characteristic of your responses, seems to absolutely support the point Mr. Mends was attempting to make whilst in the process of attacking his views! As a taxpayer who has just seen his property taxes (aptly described by our "county trustee" as confiscatory in nature-don't pay and we confiscate your property!) DOUBBLE in the past three years, I am in total agreement with you that simply throwing money at problem cannot possibly fix it, as our "educators," who jealously defend their nine month work "year," would have us believe. However, as you arrogantly outline your own responsibilities for your publication, you appear to want to absolve parents of any responsibility whatsoever in the educational process. You want to blame teachers for everything, blindly ignoring the fact that they have only a small percentage of a child's time and attention in which to accomplish all the tasks that you would have them perform. How can you expect a child who is permitted to watch an unlimited amount of television and never

required to bow to authority at home to be "educated" by ANYONE, even YOU! I would guess that you have no children of your own, and probably want none, ever! Otherwise, I cannot possibly fathom the apparent dichotomy of your passionately expressed views.

Indeed, the comments you make regarding Mr. Mends's letter, seem, in my own humble opinion, to reinforce exactly what he said, not refute it! As you so grandly accept full responsibility for your business endeavors, you exonerate parents of ANY responsibility whatsoever for their own offspring's education. Nothing could be further from the truth, Mr. Rickard, no matter how elevated your opinion of yourself may be, or how you may rave at your readers' "ignorant" beliefs.

Very respectfully,  
William R. Sphar  
From: BILLSPHAR@AOL.COM

Dear Mr. Sphar:

*Well, because I don't know anything else to DO with their ignorant beliefs. You try rubbing them out, and scrubbing them out - still ignorant beliefs around the collar. Let's focus on yours. Actually, I have four natural children and one step-daughter. The youngest is 18 months, and the oldest is 23. Four girls and a boy. All excellent students, and woefully uneducated - except the oldest who was educated in the Philippine Islands. So my lack of parental experience can't quite be it perhaps?*

*So let me do some uninformed guessing of my own. You haven't made ANY case for this "parental responsibility" theory beyond the fact that you don't think I have any kids, and probably don't want any - and you find me arrogant.*

*I find it incredible that a system sucking billions of dollars per year from our nation's resources, and whose sole responsibility in this world is to educate, can't. That they would then blame failure on parents is obscene. Yes, of course parents could educate their own children. And in fact, there is a growing trend toward "home education." I myself have indeed made it a point to teach my children to read as the result of assurances from our own local school that parents put too much emphasis on reading in the early grades and their assurance that kids can always learn to read later on in the later grades (I'm not kidding). But it is*

*a survival alternative, not a cure for the system.*

*As to the arrogance, I come with the package.*

Jack Rickard

Jack-

A note to let you know that I'm going to be doing some serious work on the TDBS app's that've been suggested in the PIMP mailing lists. Thanks much for the timely posting of the technical spec's, although after a quick skim of them, I'll probably have some questions and clarifications for you. I can't emphasize enough how much I appreciate all of your help.

On a totally separate note, I'm trying to follow up on some discussion that, as I'm sure you're aware, brought out a great deal of hell and confusion at the CON. The conferences and subsequent "meetings" regarding the emergence of a national BBS association rapidly deteriorated into heated authority bashing parties, and my feeling is that the groups I was exposed to have about as much chance of getting something done in the industry as the PLÖ has of becoming a driving force for political change.

Lance Rose, who spearheaded the initial meeting, stormed out of a subsequent meeting after the tone turned hostile, and it was difficult not to notice that people like Ward Christiansen and Tim Stryker appeared distinctly non-plussed by the developments. I've contacted Mr. Rose by e-mail to see if he has further plans. He indicated that he does indeed, and gave me the name of a mailing list to subscribe to.

My understanding, via heresay only, is that you are personally less than optimistic about the possibilities for such an association. I personally feel that if the people I've dealt with on this topic are at all indicative of the industry, you could be right. I also, however, feel that this is an unfortunate climate for an industry that threatens to be the fastest-growing in the technology marketplace, and I feel that myself and other readers would be interested in your feelings on this subject.

Though I suspect you might take issue with this, through your involvement with BBS Con, the magazine,

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## Editor/Publisher

Jack Rickard

## Contributing Writers

Bill Gram-Reefer

Lance Rose

Jim Warren

Julia L. Wilkinson

## Graphic Design

Charlie Moore

Geoffrey Lipton

## Subscriptions/Circulation

Rob King

Mary Loveridge

## Technical Operations

Gary Funk

Todd Melka

## Newsstand Circulation

Martin L. Shafkowitz

## Advertising Sales

Charlie Moore

Brian A. Gallagher

## Editorial Offices

8500 W. Bowles Ave., Suite 210

Littleton, CO 80123

(303)973-6038 Editorial

(303)973-3731 Fax

(303)973-4222 BBS

(800)933-6038 Subscriptions

## Electronic Mail

Internet:

jack.rickard@boardwatch.com  
subscriptions@boardwatch.com  
letters@boardwatch.com

FidoNet: 1:104/555

and the whole industry as a whole, you've become a bit of an authority on the subject. Perhaps you could give us your opinions on this issue, which I haven't seen addressed in print before. Do you think the industry would benefit from some sort of a trade association? Who should it be comprised of? Generally speaking, what should be it's role be?

Will you indeed be opposing Clinton in 1996?

-Matt Rechs  
matt.rechs@mmis.com

Matt:

*First, let me confess that I'm just not much of a "group" type person. Groups are generally formed to exert some power or pressure and they tend to run over people. I somehow get group behavior all mixed up in my mind with cowardice, greed, self-interest, and the lesser virtues of humanity I would prefer to believe don't exist. The concept that we are stronger when we act in concert implies that we were weak when acting alone. I don't believe so. Most of the notable contributions and turns of history have hinged on a single person who took a stand against considerable forces without the comfort of the group. Not a single one of my personal heroes ever had Assoc. as a surname. As a strong proponent of the rights of individuals and individual liberties, I find myself distanced from the entire theory behind groups. Advocacy groups, victim's groups, political action groups, professional groups, whatever. It all amounts to about the same thing, let's build a fort and keep the girl out.*

*Among most of the BBS operator community, I get to win on this one I'm afraid. Most BBS operators spend a lot of time in the basement working alone for a reason. If a generalization must be made, I would characterize them as predominantly independent minded. As such, they are not predisposed to band together, or with anyone else, for much of anything. There have been numerous attempts to "organize" BBS operators for one reason or another. All have failed rather miserably. You may be surprised to note that there are at least a dozen BBS operator organizations in existence now. They make a bit of noise, and in most cases have less than 30 "members" in reality.*

*That said, certainly I can see a role for a trade association. Trade Associations offer many advantages. And*

*close to home, we can look to the Association of Shareware Professionals as an active group that has done much for shareware authors, the perception of shareware, promotion of shareware as a viable distribution technique for software, and so forth. They've even brought into common acceptance a number of things that just never were true. So I think the BBS community would probably "benefit" from such an association.*

*The biggest group of all, our Federal Government, is now beginning to get involved with the online process. They are huddling with a number of groups that purport to represent the online constituency. Numerically, those who call bulletin boards completely swamp the numbers of people who actually run and use the Internet, all commercial services combined, and in fact every other online activity put together. But there is no voice in Washington representing any of the 53,000 public bulletin boards in the United States, or any of their fourteen million callers. The decisions about who gets to control what, who owns what, who gets to profit from what, and what the rules are - will be made by a trifling coalition of telephone, cable, and government interests and a tiny band of "we want free e-mail" education bureaucrats. There have actually been numerous congressional hearings already held with NO representation of any kind from our community. And there have actually been people who have nothing whatsoever to do with bulletin boards or grass roots networking purport to represent you - easy in the assurance that none of you would be there to catch them in their little misrepresentation.*

*I guess I believe that should probably be fixed. But no one can self-nominate themselves to represent you with any credibility, and so some form of recognized "organization" has to exist to grant portfolio to a representative who can speak with some authority and who will be there to speak.*

*And that would be the main "benefit" of having such an organization. There are probably others. There is a great deal of misunderstanding of online services in the financial community - so in many areas BBS operators try to obtain merchant accounts to handle MC/Visa and are immediately lumped in with 900 number sex by phone merchants, mail order boiler rooms, or whatever else is currently worrying the bankers. We suffer from the widespread affliction of being widespread - there is no rational means of surveying*

*the BBS community, determining income statistics, usage patterns, or any of the type of industry statistics normal to most industries through their trade associations.*

*So I suppose I do see a role and benefit from such an association, and it is probably also true that I am less than optimistic that anyone will put together something effective. That pretty much leaves the BBS community as a herd of lambs with the wolves circling. If from within itself, the BBS community can prove me wrong, it would probably be to their advantage.*

*Yes, I will probably be opposing Clinton in 1996.*

Jack Rickard

Hi, Jack.

This is a reply to your reply to Nigel Mends, whose letter was in the September Boardwatch.

First off, I can vouch for your accountability, as two weeks ago (today is October 10th) I received your September front cover in the mail — there was no magazine behind it, and it was much the worse for wear (after 4 weeks in the hands of the postal service, do you wonder?). I called your office, talked to you personally, and 5 days later received a fresh copy — sent on \*your\* dime. So thanks for taking responsibility and thanks for the new issue.

Now on to our public school system. I totally agree with you on the issue of accountability. People in the education system \*need\* to be made accountable for their actions. If teachers fail to teach well, they should be given a nice gold watch and sent on their way. This is one of the main faults of the current system — good teachers aren't rewarded and bad teachers are not punished. Don't get me wrong, there are a lot of good teachers out there. But there are those who are equally bad.

If students fail to try to learn, they should be ejected from the system. (Not those who try and fail, now, those who truly do not \*want\* to learn.) These may be fighting words to those who believe everyone is entitled to an education, but the students who put forth absolutely no effort are receiving nothing for the time they spend in school. Not only do they drag other students down

with them in ways that range from slowing down classes to bullying others, they waste the teachers time and the taxpayers money — both of which could be better spent a thousand other ways. And so, do you want to reduce that \$6500 spent per student? Remove the troublemakers and those who are just putting in time.

One other group who also needs to be held accountable is the parents, contrary to your opinions. In my experience (with our local suburban school) 90% of the top fifth of any class have parents who care; who take an interest in their children; who hold their children accountable when they make mistakes and praise them when they do well. And with the bottom fifth, the opposite holds true. Either parents have to take an active interest in the education of their child or the school must function as a surrogate parent — teaching values, enforcing limits and doling out rewards and reprimands. Schools today are not equipped to do this (or at least those with which I am familiar with are not).

I have a view from the inside here, though it's probably biased. I'm a junior at my medium-sized (180+ kids per grade) high school in suburban Pennsylvania. My father is a teacher at that school, and I'm in most of the honors courses. Let me tell you, this system is seriously screwed up. I've experienced bad teachers who cannot be removed because of state laws and union contracts. I've experienced kids who just put their time in at school, doing nothing and waiting until they're seniors as they can graduate reading at a 3rd grade level and not knowing their multiplication tables. I've experienced an administration who does not seek to better the school — they're just content to move students through like an educational factory. You're right, something has to be done. \*Someone\* has to take responsibility, whether in the school or out. In fact, everyone in the educational system \*must\* be held accountable for their actions, from the administrators to the students. And someone extremely courageous is going to have to start it.

And great job with the magazine — it's one of the few I can afford as a lowly teenager trying to run a one-line BBS (my big splurge was a new 21.6 USR Dual :). But it's amazing what you can do with some cheap or free software, Fidonet, and a little programming expertise to tie it all

together. Now if I could find a local UUCP site! <g> Keep up the good work!

Mark

mark.histed@f332.n268.z1.fidonet.org

Mark:

*Thanks for writing. Ultimately, yes, everything can be spread around in as wide a circle as you care to draw. This is the case with anything. The proper approach, in my view, is when faced with success, spread the praise as widely as possible. When faced with failure, assume it is all yours. This encourages your associates in success to contribute to further success, and let's you very realistically address problems head on to avoid future or continued failure. The current crop of professional educators seem to favor the opposing approach. And they, not the parents, and not the students, are charged with making our educational system educational.*

*Most of the teachers I've been in contact with, though certainly not all, seem more bent on convincing me that somehow they should be paid as much as baseball players if our "values were right" and seem further bent on new and convincing ways of holding our children hostage for cash. Every solution coming out of our local school system revolves around their need for more money. I remain unsympathetic in general. The minority of teachers actually dedicated to teaching do have my sympathy, for striving in a quagmire of mediocrity and bureaucracy.*

Jack Rickard

Hello Jack

I just discovered BoardWatch and wanted to let you know I could almost turn every sentence of your august 93 editorial "emancipation constipation" into a tag line for my mail reader. In other words I love what you said and I love your writing style.

I thought I would send this through internet on Compuserve from my Amiga based BBS just to show support for your contention that BBS's will soon be the Volk interface to the "information highway" we now call internet. In fact the latest entry into the Amiga BBS software competition (XenoLink) comes configured to hook immediately to internet and assigns an internet address to all users as they register, automatically. Prophetic.

I also am leery of the way Clinton and Gore are trying to get some claws into this resource by offering to "give" a fiberoptic based infrastructure to this so called highway. What the government "gives" they also control, right? Of course we all know the big corps have been building that fiberoptic network for years and that is what he refers to. As the Whole Earth Catalog said on the inside front cover "There is no such thing as a free lunch." The sum total of the hippie experience, I always thought. With this near socialist administration there is especially reason to suspect they want thought control over the anarchy of cyberspace. Great magazine!

Tom Jones  
Oklahoma City, OK  
76470.1332@compuserve.com

Tom:

*You bring up some very interesting points. See the National Information Infrastructure Agenda in this issue.*

Jack Rickard

Jack,

Enjoyed October's issue of Boardwatch very much. However, I was quite disappointed to see that the section for ROBOBOARD /FX seemed to have been misprinted to a certain extent.

On page 25, you mentioned about the fact that the RIP II graphical "standard" was not yet ready and that they showed a video tape of the RIP II and what it is supposed to do. You obviously had the experience to see a demonstration of the new TEL/FX graphical protocol by Hamilton Telegraphics.

On 25, the paragraph ends like this: "They showed a video tape of what it..."

And continuing on page 26, we read:

"correction in a pretty handsome way"

To give us the sentence of"

"They showed a video tape of what it correction in a pretty handsome way."

I know that you were talking about ROBOBOARD /FX, and NOT RIP, but to the casual observer who may not "read" rather "skim" the article MAY get the wrong impression that you were referring to RIP and not the

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TEL/FX protocol.. And you are correct, FX is now HERE, AVAILABLE, and quite WORKABLE!

I have been the system operator of a BBS for going on 12 years now, and I have never seen online graphics that equal the TEL/FX capability. RIP is very limiting to only the USER end, as the SYSOP only sees ASCII codes for the RIP graphics, and usually doesn't know where or what the user is doing since they see ASCII rubbish.. Why Dvorak gave RIP the award for "Best online graphics" is beyond me, since I have tested all of the "standards" ranging from NAPLPS, ETGC, BIG, RIP and ROBO, and I have to conclude, especially after the release of FX and the results of testing all the other protocols available, that the TEL/FX protocol is the fastest and most efficient way of sending online BIT IMAGE graphics. Dvorak obviously does not call BBS's too often.

The excuse that "overhead" caused by graphics at both ends would slow down performance is not a very good one, since ROBO and FX have been showing both USER and SYSOP HI resolution graphics in both real time and at the SAME time since its' inception 1 year ago, with very little noticeable slowdown in system performance! FYI, I ran a 2 line system on a 386/33SX both graphical and there was very little system slowdown, even using graphical mode at both ends on BOTH nodes!

However, you did state that FX should not be overlooked.. I agree with this statement 100 percent! Which is why I intend to write TEL/FX compatible doorware/utilities in the future. And it is INDEED a shame for the best of the best standards to fall by the wayside of an lower end standard simply because software developers choose to use the "quick and easy" approach to their development! If people did things "quick and easy", Columbus wouldn't have discovered America, Thomas Edison wouldn't have invented the light bulb, Alexander Graham Bell wouldn't have invented the telephone, the list is endless! If software companies want to give people "quick and easy", maybe they should go into the frozen food business!

In the final analysis, it's why pay more for less?

FX is also "quick and easy"! Thats right! For the end user and SysOp that is. Sets itself up in 5 mins, and your on your way! The only real

"work" is left for us programmers. I, myself, enjoy a good challenge from time to time.. And as you state in your article, for those of us who want to do things RIGHT, don't overlook this standard! If doing something right means actual WORK on my part I'll do it! Sure, it may take some time programming that door, but the fruits of the labours far outweigh the time spent planting and harvesting! I think my customers deserve this effort.. My only wish is that other software developers think this same way..

I would really like to read the article about 1 BBS CON in regards to graphics complete, without misprint. Is there a way you can re-produce this article in a future edition of BoardWatch? Or perhaps a review of this premier BBS Software?

I thank you for your time, Mr. Rickard and look forward to more BoardWatch!

James Williams  
SysOp Blackstone Valley BBS - (401)  
769-2055  
Woonsocket, RI

James:

*Quite so. We left out a page, and it was rather one I wanted. We have reproduced the entire text of the graphics section of that report in this issue - with my apologies for the rather unprofessional omission. We'll try to do better.*

Jack Rickard

Dear Jack:

Yep. BBS CON '93 was a great success. Being held right here 4 miles from my haunts in the Old Colorado City District of Colorado Springs would have made old Nikolai Tesla proud. As one who blew out the local power station in 1899 with one of his great electric hacks he and Ward Christiansen would have gotten along fine, going online from Rogers Bar.

Yes, there was plenty of interest around our Troika NAPLPS booth from some very interesting innovators now busy at work on new inventions.

One thing I wish you would correct. You have repeated it twice now in your pages, and its simply wrong. You keep referring to Troika as a NAPLPS based 'terminal program.' Hardly. Terminal programs, even in

NAPLPS are plentiful. It is a DRAWING program, a TEXT entry-editing, as well as being a TERMINAL program. All very different, basic functions. Troika. Three. All in one package. Get it?

Troika was designed precisely to put into the hands of end users of BBSs or any other online - including e-mail only - services the ability to create both animated graphics and text in any language font, communicate, and display in NAPLPS, ASCII and mosaics (i.e. Minitel) formats. As well as import from other formats. The package we released at BBS CON for \$99 included NAPLPS Tools with conversion utilities, some in shareware format from NAPLPS geniuses as Michael Dillon of Canada, Shawn Rhoades of Atlanta, that can take such powerful and elegant graphics and font designs as Corel Draw, or as popular, if hardly compact form as GIF, and turn them into universal and international standard NAPLPS. So your derogatory reference a couple issues ago to the 'only a NAPLPS terminal program for \$150' was way off the mark which we learned had misled people at BBS CON. We have site licenced Troika to schools and for nets for as low as \$50. For all three - graphics creation, multi font text editing, and multi-standard terminal program. Anybody else doing that much for that little?

Why isn't it free ware or shareware? Well I'll be darned, Jack. For one who doesn't do a share-print publication called Boardwatch, and ran a conference with a partner who hardly gives away TBBS, based on 'how to go into business with BBS' charging for usage, I am surprised at your reaction to the novel concept of charging for a commercial product, on which we have to pay a modest royalty, guaranteed. Even some of the vaunted 'shareware' programs you tout sure have 'gone commercial' the minute they succeeded. I doubt if its greed. I got a hunch it is the cost of further, professional, development. Hey nobody OWNS the Naplps standard. Anyone is free to get the standard, and write a better program than Troika and give it away. But at the Graphics Roundtable, I was interested when a developer, when asked, why he had not just extended NAPLPS, answered "It was too hard." Hmm. In our case we paid three Russians real money to help develop it. And gave them a piece of the action. Its called capitalism. An admittedly ever-rarer idea in the online world which has created a culture of 'something for nothing.'

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A.J. Janschewitz  
Connecticut Department  
of Revenue Services

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I am a strong believer in giving the end user the ability, at affordable cost and in as standard a format as possible, the ability to CREATE and not just consume text and graphics. And in view of the rapid international spread of grass-roots, from BBS through X.25 commercial, to Internet telecom, there are lots of languages, math, sciences, and business characters in this world which cannot be represented by ASCII. Computer programmers in the world may use ASCII, but I can tell you millions of writers, teachers, students, journalists, in other countries don't. And there are lots of cultures, from French to Arabic who don't WANT to read and write in English. Their language is central to their culture.

Let me tell you, the large academic, business, and government audience I addressed in Turkey last week really appreciated it when I was able to dial up an innovative local commercial Istanbul BBS, which then interconnected by X.25, then through TCP/IP Internet, and into my oldcolo.com system in Colorado, and swiftly display Turkish Proverbs in correct Turkish, together with red star and crescent of their flag, using the ISO 2022 character set their standard association had registered a long time ago.

Had I known Turkish, I could have written a proverb of my own, illustrated with renderings of mosaic art from ancient Byzantium, and uploaded it into e-mail, all without dropping carrier. And anyone using HAWAII FYI's dual Ascii-Naplps service with a NAPLPS terminal program from other sources could have seen it through the Internet.

No, NAPLPS ain't dead, Jack. It has lots of capacity to absorb the best ideas from other places. And still be a standard. How about MIDI based sound, beyond JPEG and mouse control?

Dave Hughes  
Old Colorado City Communications  
dave@oldcolo.com

Dear Dave:

Thanks for writing, but I believe you have misconstrued my comments and position with regards to charging for software, or anything else for that matter.

It is true that I believe NAPLPS, or any other graphic protocol, will win or lose on the caller end in the terminal pro-

gram. It is also true that I don't think any graphics protocol will even get a fair hearing without a freely distributable and freely available terminal program - or inclusion in an already popular one. But I did not imply, nor do I mean to imply, that yours should be it.

In fact, personally, I think the eternal quest for free is a fool's errand. I am somewhat fascinated by the shareware concept, but mainly in its energy, and that anyone would actually do it. It provides a means for someone who has a program to see if it might be a product. It implies that they don't know. If it becomes popular, as you note, the usual transition is then to retail distribution, commercial distribution, or something else. I can make a case for contributing software to the community at no charge. I can make a case for selling software commercially. But while I can observe the obvious energy and success in many ways of shareware, I don't entirely understand it. It looks like a way to put your toe in the water and start a software company without actually committing to it. Perhaps that's the role it plays. It does trade income for wide distribution and renown, and yes, they do seem to want to reverse the trade later.

For myself - vote in decimal. The only sure way I can tell if anything I do is worthwhile is to count the response in dollars. If there aren't any, what I did just must not be any good, and I take a certain amount of pride in being able to look that monster in the face and believe him and accept it. On the other hand, a thing made well will draw its own following. If our efforts do result in plaudits, decimal plaudits are the most sincere. What little bit of money I do have came hard enough, and if I vote for something with hard won pesos, I mean it. So I'm not really an advocate of free - I think it is a poor measurement of success.

And I wouldn't presume to tell you how to value your own efforts. I wish you every success with Troika, and hope you make millions from it. I understand someone is adding mouse support now to NAPLPS, and I don't count it as dead at this point, just a little wounded.

Jack Rickard

Hi Jack,

I'm currently in the Navy and for the past two and a half years have been stationed in Japan aboard the USS Independence. Due to this fact I have also been away from the

modemming community. While browsing through the magazine rack of my local Stars And Stripes book store, I happened across your May issue of Boardwatch Magazine and knowing I was due to transfer back stateside soon, decided to pick it up to see what I had been missing. I couldn't believe how much had changed. Back then, I had no idea what Internet was, and GUI BBS's were something I'd only dreamed of. Needles to say, you've gotten me hooked once again on modemming and as you can see, I'm now "hooked up" on the Internet. I just registered on Delphi two days ago and am in love already. This is my first E-Mail message in over two years and my first ever on Internet. I'd like to thank you for an outstanding magazine, I look forward to reaching my final destination (I'm currently home on leave between duty stations and couldn't wait to get connected) and start receiving my subscription. I've read every issue from then to the Aug issue.

I'd also like to say (just in case someone out there cares) I was the SysOp of a small board in San Diego called The Far West before my transfer to the Indy. If anyone out there remembers me you can get in touch with me here...

Thanks again Jack,

Johnny... bilwes@delphi.com

Johnny:

I spent nearly four years on the U.S.S. Midway myself - homeported in Yokosuka Japan in the late '70s. One of the strangest elements of the online community is the number of people who were quite advocates of it in the early '80s, went on to other things, and are now rediscovering it.

The Delphi deal is pretty attractive. They appear to have found a seam in the zone in the commercial service game by going after the Internet connection in a big way and offering it to their subscribers at a very attractive price - it may be one of the best Internet access deals going today.

Welcome home sailor.

Jack Rickard

I just received the October Boardwatch. I contained an incredible amount of information plus excellent photo's from One BBSCON. Another new high for your magazine!

It appears that your vision (as demonstrated by your magazine, bbs, meetings, etc.) is a catalyst to drive this BBS technology to meet the ever expanding needs of the users.

I find many journalists give an "outsiders" view of the field because they do not have the technical background to evaluate where things are going. They are impressed by flash and overlook early technology with potential. However, you, Jack Rickard, have the background, vision, and writing ability to inform and direct our dreams. You are just what the BBS field needs right now. You are the "Paul Revere of your times" - with your call to arms, your special knowledge, and your vision of the common good for the cyber-citizens.

Keep up the good work.

Sincerely

John V.

*Thanks John. I think you're enthusiasm for the industry itself may slightly exceed your eyesight with regards to what is causing it. We don't really "drive" anything. With both the tradeshow and the magazine, our purpose and role is to make what is already happening visible for you. It was going on all along, with the contributions of hundreds and even thousands of individuals. But it can be so dispersed that a view of all of it is difficult. By putting it on a page, or in the case of ONE BBSCon, bringing them all into the same location to compare notes, you can see what was always going on. I doubt we have ever materially affected it more than a breeze worth, but I'm pleased the window on it we try to create is working for you.*

*Technical acumen is valuable. But even there I cheat a little. Over the years, I've developed a dialing directory that can get me the answer to almost any technical question within a few minutes. It's not so much what you know as it is what telephone number you know - the information model of the future I believe.*

Jack Rickard

Hi there Jack,

Just got a hold of October issue and enjoyed slurping what I could (most of it). Wish I could have been at the BBSCon. Hey where are the student discounts and scholarships? Anyhow, I am an employee of a Ziff Communications subsidiary (Computer Intelli-

gence-InfoCorp) and I couldn't help noticing your reference to Mr. Ziff in the September issue. I am a faithful reader and fan of your magazine and personage and haven't missed an issue since I first indulged. I appreciate your niche and indeed find it interesting and eagerly look forward to each issue.

Getting on to what I am really writing about is your curiosity as to why the other Bill's boys from Microsoft were surfing your gig in CO. A while back in one of the Ziff rags I regularly find myself reading (PCWeek I believe), there was mention of MS wanting to develop API standards for messaging and bulletin boards, presumably for network and groupware applications. Just thought I'd pass this tidbit your way.

On another note, what software did you write for the C-64 platform? Incidentally, there are .QWK readers, uuencode/decoders, GIF viewers, 14.4k bps support, un-LHA/LZH/ZIP utilities, a FidoNet BBS and several proprietary BBS networking schemes (64-based PunterNet being one I encountered quite a few years ago), ANSI terms, plus Commodore Graphics (PETASCII), graphics terms/BBSs, all of which have and/or still do exist enabling fairly powerful communications on dated machines which are still being used. Pretty cool, I think. Lowly computer users being able to play with the big boys. Oh, don't forget AOL is derived from Q-link.

Well that's it for now, more later maybe. Got to get to bed soon here.

Your friend, fan and fellow user...

David Jones  
dvdjns@netcom.com

BTW - Bill Ziff also has quite a bit on you in the rotundity department. Could that be proportional to the number of magazines one publishes?? :)

Standard disclaimers apply and all that fun stuff...

David:

*Indeed, that's it. I'm told the more magazines you publish, the rounder you get. I only publish one, but it's so good that I just look a lot more well rounded than most. Bill has dozens, so he came by it honestly.*

*I don't know what Microsoft is up to. That said, I'm not at all above rumors-*

*mongering. Word on the street seems to be that we may see a national MicroServe after the fashion of CompuServe - a consumer online service. Terminal program, with graphics, sound, and free coke for the kids built into Windows 4.0/Chicago/whatever they are calling it now. And, you'll be able to purchase home entertainment software online and download it. Some talk of it being the "new" way to distribute software and updates (sheesh). I've even heard pricing of a flat \$20 per month.*

*I would conjecture that while most of the software industry is in angry terror over Mr. Bill kicking their arses in business software and operating systems, he has his eyes on a bigger prize - home computing. He has always had a vision of a computer in every home going back to the beginning and I would conjecture it's even irritated him that the intermediary market was strictly business. If he's right, there are of course a lot more homes than there are businesses. But I guess, what's a \$4 billion software company to do from here?*

*Despite all the whining and complaining in the industry, and Mr. Bill is actually none too personable even in person, the bottom line is he does good products the hard way - one release at a time. Windows was NOT an overnight success. In fact, it was a joke for some time. Nobody is laughing now. Excel was NOT an overnight success. He took an awful beating in LANs (so far - this guy doesn't actually give up ever). I would not find it unimaginable to see him do a large scale online service, badly, and then not so badly, and then pretty well, and finally really well - until he owns most of it. That seems to be the pattern. He may not be a nice guy, but he is determined and he is smart.*

*As to the debris of my own software career, in the early 80's I did several long forgotten C-64 programs and a couple actually pretty successful Sinclair programs. For the C-64 I wrote a program and book titled "BASIC: A Tutorial for Orbyte Software." I also wrote a debugger titled "Microscope-64" that looks remarkably like Borland's Turbo Debugger - mine was first. It let you step through an assembly language program quite visually. And I did a program titled DeSquire that had a rolodex, calendar, notes, calculator, and so forth with a couple of fairly remarkable features. The first was that it hid entirely in RAM under the BASIC ROM (assembly language) and so actually occupied only about 130 bytes of the available RAM. Sec-*

ond, the thing would dial the phone for you without a modem. You did have to hold the handset in proximity to the video monitor speaker, but it would generate the dual tone multifrequency tones necessary to cause the telephone switch to make the connection - it used the three-voice sound synthesizer on the C-64. The roloDEX was quite fast, so it was easy to find someone's number and dial the phone. I almost wish I had something that easy on the PC today. The calendar, calculator, notepad and so forth were much like *Orland's Sidekick* - and again preceded it by a year or so.

Oddly, I did nothing in telecommunications. My main Sinclair program was a word processor (for a computer with no keyboard naturally) titled *Z-Writer*. It actually did pretty well - Z80 assembly language.

Jack Rickard

Hi Jack,

Your October editorial got my attention because that story about what the Massachusetts Dept. of Revenue is doing to Brian Miller and the Channel 1 BBS seemed so unbelievable! I wasn't aware of that point of view. Now that you've described it in that sense, I \*still\* can't believe that's the whole story. What'd Brian do to them to put the wind up their noses like that? Pay his taxes in pennies last year? Wow...

Scary stuff for sure. Makes me think though. When I got a sales tax license from Colo Dept of Revenue I asked the clerk about what the department considered data (not software) on disk to be. Was it sales-taxable or did they consider it a service (as a "data-creation" service and not subject to sales tax? The clerk I spoke with asked me if it was a tangible good, and questions like that, which indicated to me that at least one person at the Dept. of Revenue was unclear on the concept.

I wasn't really surprised though. From a legal point of view, it seems a lot about modern technology is still unclear. I could easily make a case for saying data on disk is only a disk and how the magnetic particles are arranged is not a "tangible thing" that the state can tax. On the other hand, I could just as easily argue that the magnetic arrangement makes all the difference. However, I'd rather do other things than fight pinheaded bureaucracy, so I decided to

charge sales tax on data and pay the state sales taxes on it anyway, just to avoid any future business-threatening surprises.

However, a BBS "service" is even more vague, and there's a real spread in the spectrum, too. It's easy to confuse the medium with the message when the value of a thing is in the beholder's mind. It would be very disappointing to have heavy taxes levied on anything called a BBS, based solely on cases involving only the bigger commercial ones.

I guess the real sales tax rule is based not so much in the definition of what's "tangible goods", but how much and how concentrated the money is in an enterprise. If there's enough easily visible money in something, you can bet it is taxable or illegal. I agree with you that at some point there will be taxes on at least some BBS services, but what would you suggest be done to influence future actions from state bureaucracies acting like a blind dog in a meat market... stabbing at anything that smells good?

Do you know if there is any lobby organizing to develop a voice to give our legislators a coherent opinion? Do you suppose you could get an interview from someone at the Mass Dept. of Revenue and find out what the heck was in their mind when they charge taxes retroactively? Are they really playing "Calvin Ball" here or is there a old Puritan blue law from the 1600's still on the books? ("Thee shalt suffer to pay thy State appropriate tithe for all monies generated from thy BBS or other such demonic activities. Hereof fail not, lest thee wishe to be humiliated in the stocks and summarily tossed into debtor's prison").

Thanks to you and Lance Rose for hauling these stories out into the light. When you play them out in the magazine, it's reassuring to know the whole on-line world is watching. Now we need to get the rest of the world watching.

Bill Thoen  
GISnet BBS 303-447-0927  
bill\_thoen@gisnet.com

Bill:

*There probably are, as you point out, some issues relating to what is taxable and what is not. I expect to see them clarified legislatively, probably in favor of them being taxable, but perhaps*

*not. I would be somewhat less inclined to accept a department ruling that it "is now and from henceforth taxable" - widely promulgated and appropriately announced.*

*My problem is with "creatively" interpreting tax law, and then applying it in arrears. Had they audited Mr. Miller and notified him that as of some date in the very near future, it was their determination he would be required to collect sales tax, taxability would be the issue. That isn't what happened. They notified him that they had decided it WAS taxable and he SHOULD have been collecting tax and so they wanted it all now - a check would be fine. This is the kind of beaureaucratic nonsense comedies are made from, but it also destroys small businesses. Ultimately, in a world where BBS operators can live and work where they please, Massachusetts will be the loser, not the bulletin boards. Wyoming will do really well.*

Jack Rickard

Hey Jack:

Thanks for taking the time to announce "demos" to the public via your *"BOARDWATCH"* magazine when I sent you the "internet demo site press release." I have received at least 15 E-mail messages, five letters, and two phone calls as a result of my name and address being printed. I have done what I can to provide these people with demos and information on demos to help the demo cause.

As you have heard (from the letter you responded to in your September issue) there is a great interest in "demos." I was lucky enough to have some people send me the article/cover and letter column relating to demos thus I can now respond to what you have written. Let me do that now.

Comments on the DEMO article:

Actually demos are not "quite new" unless you consider early to mid 80's new. I believe demos started on the C-64 and some (even myself) believe demos grew out of crack screens on commercial software. I have collected demos on the C-64 since 1987 and have some dating back as far as 1986—the older they become the harder they are to find because many "elite" persons who collected software deleted anything considered lame/old. On the same note the

newer demos made older ones seem like "shit" thus they—older demos—often got deleted unless the person was a serious collector. Another problem that plagued the C-64 was the NTSC/PAL compatibility. And since many demos come from Europe (PAL) most didn't (and still don't) work on our NTSC computer and were deleted. The "true" history of demos is a gray area for me. Demos also exist on the Amiga, Atari ST, Apple GS, and of course the PC. Other machines include Macintosh (probably very few—no real ones besides "stacks" which I have seen), and SNES (so I have heard). Other possibilities include Atari 400/800, Apple II, Vic, and the TI Sinclair though I have never seen any demos on these early 80 machines.

Most seem to agree that the best demo productions exist on the Amiga with the PC being a few years behind—amazing huh.

All the big demo parties—which usually draw over 1000 enthusiast—are in Europe. To my knowledge no such party has been successfully done in the US. Probably because of the smaller interest—but maybe that will change.

I really enjoyed the write up.

#### Comment on LETTERS TO THE EDITOR (September):

The first demo I saw was Fishtray by Future Crew in May of 1992. This demo made good use of the SB the system was tested on. In fact the Sound Blaster is the card most demo groups supported then (late 80's early 90's) and still support today. It is hard to say what demo was the first to support stereo—I tend to believe it was a BBS intro/demo called "fantasia" with an airwolf type tune. Sure enough, once the SBpro was released the stereo demos were soon to arrive. Now, stereo music is a given in demos—at least major productions. Many groups are supporting the gravis Ultrasound because it is a "less CPU intensive" (i.e. the computer is interrupted less often to update the music allowing for more time to be devoted to code) card with 32 channels. Well, this is how I understand it to work. It all boils down to being a more "programmer friendly" card thus is being widely accepted by the demo culture. Gravis's support of demos has greatly helped the cause and will surely help their business in the long run even though many magazines have writ-

ten the GUS off. Proof of Advanced Gravis's interest lies in their attending/sponsoring of Assembly '93 in

Finland—not to mention their giving you and certain "top rated" demo groups their sound card.

Some final notes:

I noticed you mentioned doing a follow-up—sounds great—so I figured I would fill you in on a few tidbits to help you in your article (again).

Sources of information include: Book—"Walkthroughs & Flybys CD" by Phil Shatz which contains 1 chapter on demos—various issues(?) of "PC Format" magazine (UK publication) which contain demo reviews, "Game Players PC Entertainment" NOV/DEC 1993 issue (I was told), "Dr. Dobbs Journal" DEC 1993 (Tentative), the USENET newreader group `comp.sys.ibm.pc.demos`, and of course the internet demo sites—<ftp.uwp.edu>, <ftp.eng.ulf.edu>, <ftp.sun.ac.za/u/msdos/demos>.

There is also a E-mail list of many demo groups being put out that can be found on the internet demo site. I was lucky enough to attend Assembly '93 with a few friends and will admit the new demos being released are a "step ahead" of the UNREAL and Crystal Dream of last years contest. The top four PC demos were:

- 1) Second Reality
- 2) Optic Nerve
- 3) Elements
- 4) Saga.

#### Some Demo BBS's:

Programmer Oasis(TX) - (214)328-6142  
Quantum Accelerator(ND) - (701)258-0319  
Spasmodon(Canada) - (514)744-5718  
The End of Time(SC) - (803)855-0783  
Witch's Brew(NC) - (919)942-3170

Saga, one —\*\*\*—ndscape scenes. Bevis from the infamous "Bevis & Butthead" show makes a guest appearance. Second Reality (aka Unreal 2) is due to be released early October and contains some of the most amazing stuff never before seen on a PC—even Surround Sound if you have a GUS. On the same note UNREAL will be re-released with GUS support. Optic Nerve will most likely make it out late October and I have no idea about Elements.

That is all I have to say in this informal "press-release" and hope it helps you in your follow-up article on

demos. I have not been as "up to date" as I would like on demos because of my lack of PC availability. But, be on the look out (in the near future) for a demo CD and possibly a demo BOOK which will cover code, history, and the demo revolution.

Update—I hear the second reality demo will be released OCT 9th at a party in KERAvia FINLAND.

Down & Away,

Dan Wright  
[dmw@eel.ufl.edu](mailto:dmw@eel.ufl.edu)

Dan:

*Thanks for updating us on the demo scene. The "newness" is a function of platform more than calendar. I think we are going to see sound cards become more common on PCs.*

*Why don't I just publish your letter and we'll be there. I can't wait to see those top four new demos you listed. We've got screen capture down to something of an art here at Boardwatch, but most of the demos seem to defeat our best efforts. The stories suffer from a lack of a sense of what is visually going on. We're rather describing Michelangelo by waving our arms here. Any pointers you might offer to making the grab would be appreciated.*

Jack Rickard

Mr. Rickard,

Regarding the on-going conversations in the "Letters to the Editor" section of Boardwatch magazine, I may have a solution for you.

There are several magazines on the market today which use line-drawn "caricatures" of the authors for their columns, much like the line-drawn caricature used in your editorials. You could always switch to something like that, which would relieve everyone—as it would be black-and-white instead of a full-color photograph (and thus, would not stick out to offend them).

Admittedly, this would involve an initial one-time charge for the artist. But that is a decision you would have to make. Personally, it does not offend me to have photographs of your columnists. In fact, I sort of missed Mr. Thompson's not being included in the October, 1993 issue.

Thank you for providing a magazine of such obvious use to your readers. I have only been reading for a few months, but I do believe I am hooked.

Steven J. Foust  
Microcomputer Specialist, USDA  
70632.3177@compuserve.com

Steven:

*The bottom line is we don't really need a solution - I don't think we have a problem. Actually, I'm delighted they are offended, and, in reality, so are they. This is kind of a new age game where you actively look for things to be offended at so you can publicly express your outrage, and gain attention for your favorite advocacy schtick. Everyone involved is tickled to death. Jim gets to wear his hat. The militant anti-smokers have something to be offended at. I've got letters to respond to. It all works. Even Marlboro makes out from the debate.*

*Mr. Thompson didn't appear in the October issue, and was the lesser of several page layout disasters - not an editorial decision. We have kind of run dry on the graphics end of the world right now, but we hope he's back with us for the December issue, and sporting his hat akimbo.*

*As to caricatures, we do use them, and I rather like them. Myself, Lance Rose, and Bill Gram-Reefer all sport little drawings that resemble us in certain ridiculous ways. Charlie Moore drew them and has done others. He works here at Boardwatch, and it isn't really an extra expense. He does them in about five minutes. They tend to put things in more irreverent perspective, as it is our wont to do. Maybe we should do one of Jim - in his hat.*

Jack Rickard

Mr. Rickard:

I would like to offer a brief comment on the article "Gutenberg Lives" by Kevin Savetz that ran in the October issue of Boardwatch.

I have been aware of the Gutenberg Project for some time, and I think it is a great example of the very best of what the Internet has to offer. I endorse the project whole-heartedly.

As a graduate student in Library and Information Science, I would like to offer an answer to Mr. Savetz's query "...if books were free...would like libraries become extinct?"

Public libraries in this country are free, and always have been. Obviously, we pay for them through taxes, but then the Internet backbone that supports Project Gutenberg is largely financed by tax dollars.

My point is that free literature for the masses is nothing new; and applying for a borrower's card at your local county public library is still a whole lot easier than figuring out how to do an anonymous ftp. And if you don't have the money to get access to a computer terminal, Project Gutenberg might as well be on the moon. This may be an age of electronic wonders, but not everyone can enjoy them. Librarians see to it that a small part of our tax burden is put to good use by guaranteeing that access to literature, and information in general, is free and universal.

Electronic texts are obviously superior for research purposes, as Mr. Savetz points out in his article. But scholarship is not the only reason (one hopes) that we read literature. I think it will be many years before most people are comfortable with reading whole novels on a video display screen. I don't think I ever will be.

I see Project Gutenberg as a complement and an enhancement to traditional library resources, not as a replacement for them. The Internet still belongs to the few, while public libraries belong to us all.

Jeff Hall  
Catholic University of America  
Washington, D.C.  
67hall@cua.edu

Jeff:

*I couldn't agree with you more. Electronic text offers some superb advantages in that you can perform machine processes on them to compile a variety of very interesting results that would have been far too tedious to do manually. But reading from a terminal is not only "difficult", I actually think it is an entirely different process. I react to things quite differently on screen than I do on paper. The futurists have been calling for the demise of paper publishing for years, and it will not happen in our lifetimes if at all.*

*Not that it would matter if it did. The concept of libraries and librarians being made obsolete by the technology is happily ludicrous. Electronics is about access not, format, and so are libraries. The library sciences have for*

*many years been the most progressive group among the publicly funded in taking advantage of this technology, generally on budgets that would make the poor-mouths in the education field blush with embarrassment. Every contact I've had with libraries and librarians regarding online technology has been universally positive and progressive. And I've come to have an enormous respect for a group of public servants who continually, and in widely varied locations, exhibit superb pride in their profession and service. This is so widely positive it makes me wonder if there is some sort of librarian "gene" at work here. Resisting the urge toward the status quo, they've aggressively established literally hundreds of online catalogs, research aids, and access to the point where in many cities they are actually the window to the online world for the otherwise unconnected. And all of it seems driven by an almost obsessive dedication to making information available to all.*

*My enthusiasm for this group of people knows no bounds. If we could only infect the teaching profession with this same quality....*

Jack Rickard

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June 29, 1993  
ZyXEL U-1496 PLUS



February 1993  
ZyXEL U-1496 PLUS



The ZyXEL U-1496 PLUS costs less than many of the V.32bis modems that it outperforms.\*



JULY 1993  
ZyXEL U-1496 PLUS



JULY 1993  
ZyXEL U-1496E



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ZyXEL U-1496 PLUS  
Top 10 List



JUNE 1993  
ZyXEL U-1496E



The ZyXEL modem is faster  
practically across the board.



JULY 1993  
ZyXEL U-1496 PLUS



November 1992  
ZyXEL U-1496  
ZyXEL U-1496E



Winter 1992 ZyXEL U-1496  
Awarded 5 NextWorld Cubes

# TELEBITS

## RUMORS AND FACTOIDS

Rumors continue that Microsoft is pondering the concept of a Microsoft Online Service after the fashion of CompuServe or America Online. The \$4 billion company appears convinced there is a home market and their consumer products division is planning a software introduction every two weeks for the next 18 months. Rumors about MicroServe revolve around the concept of a built-in graphic interface terminal program appearing in every copy of Windows 4.0. The terminal program would be used to access a Microsoft national network. Some versions of this rumor even specify a flat rate pricing on the order of \$20 per month. If so, the service could conceivably allow callers to order game and educational titles online, pay for them, and download them immediately.

Sparky Herring, author of **QMail Deluxe**, **1stReader**, and the original **.QWK** standard for offline mail readers, is rumored to be working on a new **.QWK II** standard to accommodate some of the advanced features users have been clamoring for, most notably support for RFC-822 style Internet messaging. It incorporates unimaginable TO field/FROM field sizes of 32KB, message sizes of 2.8 GB, audio, video, file attachments, and more. An October release is possible. As the BBS community has gone to Internet mail in a big way, the original **.QWK** standard is showing its age. According to Herring, he'd like to build something for the 21st century. He would be the guy to do it.

Novell is about to release a **Novell DOS 7.0**. Two things notable, they are finally dropping the DR DOS title in favor of "Novell DOS". More importantly, this DOS ostensibly includes pre-emptive multi-tasking.

U.S. Robotics announced a reduction in the sysop pricing for their **USR Courier Dual Standard V.32bis Turbo** model to \$399.

We regularly face the "on attack" mode from the femi-nazi contingent about why there are no women sysops. We lack a response because

there are women sysops, and there always have been to our knowledge. Admittedly a small minority of systems are run by women, but to our knowledge there have been bulletin boards run by the gentler gender going back at least ten years that we can document. Brenda Donovan of **Pacific Rim Information BBS** has agreed to put the question to rest once and for all by assembling and maintaining a list of bulletin boards operated by women. To be included, contact Ms. Donovan at her BBS in San Diego at (619)278-7361 or by Fidonet mail at 1:202/701.

Who's moving the modems? You might be surprised. At a time when hardware and software retailing has gotten to be a REAL tough game, **Software Etc.** has EXPANDED to over 300 stores in 1993, and plans to add 70 more in 1994. What's selling? Not just software apparently. The retail chain has made a aggressive move into peripherals, sound cards, cd-roms, and modems with pricing that is causing waves of both nausea and early retirement among the competing chains. They currently have a **BEST DATA model 1442FX** at 14.4kbps V.32bis with 14.4 send/receive fax for \$149.95 - despite the suggested retail price from the manufacturer of \$319. They're also one of the very few still selling 9600 bps modems and they are reportedly moving a mountain of them - price being the operative motivator at \$99.95. Rumor has it they've moved over 50,000 modems through Software Etc. so far this year.

The chain has also grown very chummy with **Prodigy** and is moving a LOT of Prodigy kits for the online service. What's a lot? With 1.2 million households online, Software Etc. alone has moved some 115,000 of these starter kits. Call 800-328-4646 to find a Software Etc. near you.

Speaking of Prodigy - they've been having some minor contests and other giveaways lately. One of the little prizes that caught our eye - a walnut box the size and shape of a small can of tomato sauce - with a shiny brass deluxe **SLINKY** inside. This thing virtually shut down the Boardwatch offices for a day while we played with it in every stairwell



within a block. If you don't have a Prodigy slinky on your desk, you're just not a stick.

**MORE POWER SCOTTY** - the common discussion of the information infrastructure tends to revolve around who's really going to plug it in - the cable companies or the telephone companies. But there may be a third player - power companies. **Entergy**, a New Orleans electric and gas utility, has wired 50 homes in Chenal Valley, Arkansas, through their Arkansas Power and Light subsidiary with what looks like, acts like, and works like a fiber optic telecommunications system. The real purpose of the experiment is to reduce electricity costs by spreading peak demand, remote meter reading, and so forth. Entergy thinks it can reduce consumers electric bills by a third, and avoid building a LOT of new production plants over the next 20 years. They figure they can wire homes with fiber for about \$587 per house, and save 1.5 kw in peak plant output, or \$1257 per house. A fiber optic telecommunications system is just a freebie bonus. Entergy is working with **First Pacific Networks**, a switch gear company, on how to make it all make cents. Per our 1988 editorial - let every man with a pickup truck and a rusty pair of pliers provide local telephone service.

## WIRELESS MAY STILL HAVE A SHOT

**S**everal companies have developed "wireless" e-mail systems to no great roar of approval from the online community. Most of these efforts have fallen under the category of "growing a business by wishful thinking" and we've pretty much ignored them in the past. All offerings we've seen have been pretty much focused on charging by the

pixel at pretty calamitous rates. Cellular telephone, despite the pricing issues, still looks like the way to connect laptops to the world. But we did learn of an interesting alliance that could bring an interesting new product to the world. **Traveling Software**, developers of a very popular LapLink Pro communications package, have inked a deal with **National Semiconductor** to produce an integrated hardware/software package to communicate using wireless. We think TS might know what one would look like if it worked. The program is apparently on a short fuse with something birthing during the first quarter of 1994. Traveling Software - (206)483-8088.

## MUSTANG UPGRADES QMODEM TO DO COMPUSERVE FORUM MAIL

**M**ustang Software Inc. has announced a new version 1.51 of their **QmodemPro** terminal program with a free **QMGate** module that automates the task of doing mail with MCI Mail, CompuServe, .QWK mail on bulletin boards, and in this release, support for CompuServe forum discussions.

This product has been a bit confusing for us and the world at large. QmodemPro originated as a shareware terminal program written by John Friel III. Mustang Software bought the product about two years ago and combined it with an offline mail reader titled **OLX**. And the confusion begins.

We've seen QmodemPro reviewed against all manner of terminal programs, and it serves quite adequately as a full-featured terminal program. Historically, yes, it has been such a program. But that's not what this is or does precisely.

QmodemPro is a mail manager which incorporates a simple, but perhaps brilliant concept that people generally don't give a rat's ass where their mail comes from. They have only to deal with their mail and with some dispatch - all other worries aside. We're seeing a number of new product introductions that are just now discovering this approach to mail, and it would appear that none do it nearly as well as Qmodem.

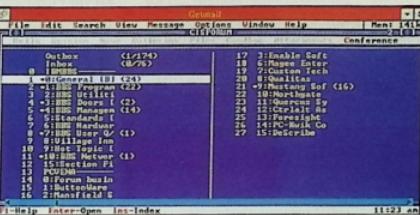
QmodemPro is a DOS platform product with a Windows-like interface and mail database heart. It includes a 124,000 word spelling checker, and a pretty facile editor allowing you to quote and reply to messages, store messages in folders, copy messages, and perform general mail mauling. It treats mail in the database as common mail while still keeping track of where it is coming from.

The program also manages mail pickup and delivery with automated scripts to dial CompuServe, MCI Mail, or a series of bulletin boards. And the series of scripts is scripted into a wholly automated mail run. The program will dial your MCI Mail account, exchange mail, dial your CompuServe account, exchange mail, and dial an entire series of bulletin boards, and exchange mail. All the inbound mail is put in a single database. You can then read and reply to each message, and when finished, the program will dial each of the services and automatically spew the corresponding replies. You really don't have to deal with where the mail comes from, or where it is going to.

Additionally, you can easily forward a message received from MCI Mail to an account on CompuServe, a BBS, or even to a fax machine using the built-in fax delivery function that works with any Class 1 or Class 2 fax-modem.

This 1.51 release adds support for CompuServe forum mail, allowing you to use QmodemPro in place of TAPCIS, OZCIS, or CIM to participate in CompuServe forum discussions from offline.

This all sounds a bit like a career move to install and set up, especially considering the many accounts you can handle from one program. In reality, however, ease of installation and use are actually the strongest part of this program. We had it up and running in about 15 minutes. We'll undoubtedly try to look through the manual someday during a power outage or something, to see if we have it plugged in correctly.



For some individuals online, an occasional e-mail message is pretty easy to deal with. But for others who market products or otherwise have a strong online presence, it is not uncommon to have to deal with a hundred e-mail messages per day on two or three different services. We've found QmodemPro to be the strongest and most usable tool available to deal with the firehose of e-mail many professionals face each a.m. It's main flaw is that it's misnamed and mispositioned in the market. It's actually a superb mail mangler, and yes, it does have a fully functional terminal program in there somewhere too. It even supports the RIP graphics protocol for those who want to play. QmodemPro, \$99 from Mustang Software, Inc., PO Box 2264, Bakersfield, CA 93303; (805)395-0223 voice; (805)395-0713 fax; (805)395-0650 BBS; Internet: [jim.harrer@musp-tang.com](mailto:jim.harrer@musp-tang.com).

## MHS/FIDONET MAIL GATEWAY

**O**ne of the ongoing challenges to all this connectivity still revolves around getting it connected. The e-mail islands are growing larger, but there are still a lot of them, and developing gateway software to connect them is probably one of the programmer opportunities of the '90s. It never ends. In fact, with the rising popularity of new mail titles such as **Microsoft Mail**, it would appear the mail gateway combinations are actually growing.

We did run into an interesting program this month titled **MailGate Gateway**. Written by Mike Faul of Sunnyvale, California, MailGate's main claim to fame is that allows you to port FidoNet messages to and from **Novell's MHS SMF-70** e-mail

system - for whatever reason. The 1.0 version of this product was released in August, and we found it a bit interesting.

MailGate actually does several different types of mail conversion. The basic mail types supported include:

MHS SMF-70  
FidoNet FTS-001.MSG messages  
FidoNet.PKT mail packets  
cc:Mail Import/Export or Remote formats  
QBBS/RA/Hudson Message Base format.

In general, MailGate is designed to convert messages between these various formats as you like. It can also be used as a stand-alone message generator/routing engine, allowing you to create a text message and run the mailgate program to produce a message in the desired format.

You can, for example, convert FidoNet.MSG messages into SMF-70 format to connect FidoNet netmail to any MHS mail program, and correspondingly, take SMF-70 messages and convert them to FidoNet.MSG messages for delivery elsewhere. In this way, you can gateway mail between the systems. In the current version, you cannot convert .PKT files to anything, although it will create .PKT output. Like most of these efforts, it handles file attachments between some formats and not others - more a reflection of the formats than the program, but it is a gateway, and our experience is you lose something anytime you port mail through one.

The program and its associated configuration files are pretty simple to set up to automate the mail gateway process. The program is released as Shareware with a \$25 registration fee, and an oddly worded license indicating that if you are a corporation, it is actually \$495. In any event, it is available for download as MAILGATE.ZIP. Mr. Faul operates the Rabbit's Foot BBS in Mountain View, CA, at (415)961-4313 and the file is file requestable as MAILGATE.ZIP from 1:143/226. The program is published under the name Icon Systems Ltd, 1035 Aster Ave. #2185, Sunnyvale, CA 94086; sysop@z1.n143.f226@fidonet.org

## NORTON COMMANDER VERSION 4.0

**Y**es, it is a Windows kind of world. The problem is, that whenever things start to go awry, I do like to get back to a familiar DOS command line to see what's going on. We've been using Symantec's Norton Commander DOS shell for approximately ever - four or five years now anyway, and never seem to quite get entirely away from it. Symantec released a new 4.0 version this past month that makes it even better.

Norton Commander gives you some directory windows that let you do the move/copy/random sort and delete thing with the best of them. It works with a mouse, with function keys, and so forth, but it also always displays the DOS prompt for those who never like to get far away from it. You can peer into files by putting the cursor on them and pressing F3. If it's a .DBF data base file, it shows it to you as a database. It has a marginally useful text editor, and there is a hex display of a file to see what characters are REALLY in there. You can mark blocks of files and move them around. It's my favorite DOS shell and has too many features to list here.

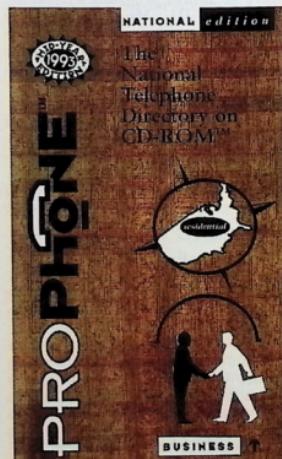
That said, it does have a few shortcomings. The file viewer does all of the spreadsheet, database, and text file formats, but not graphic images. 4.0 lets you look at .GIF, .TIFF, .BMP and .PCX images just by pressing F3. You can zoom them in and out, pan them around, it works. The old version would not let us deal with entire directories very well. 4.0 allows you to move, copy, or delete a directory with all files and subdirectories beneath it. 4.0 supports ARJ, ARC, LHARC, PAK, PKZIP, and ZOO compressed files. It allows you to very easily point at a file or directory and compress it into a .ZIP file. The find file command now searches for text strings within files. The previous version only allowed some 550 files in a directory to be displayed. With network drives, this was a limitation. The new version sorts and displays up to 1500 files per window - better. The program has a menu system in it, for those who want that. And MCI Mail is built in.

This DOS shell is a bit of a Swiss army knife, and this new 4.0 version is a big step up. Sure, there's a few things we'd also like - for example, you can view the contents of .ZIP files, but can't actually view what's in a .DOC file within a .ZIP. You can view a file in HEX, but it is not really a HEX editor. Overall, the most used icon on OUR windows panel is still Norton Commander - even better in 4.0 at \$99. Symantec Corporation, 10201 Torre Ave., Cupertino, CA 95014; (800)441-7234 voice; (408)255-3344 fax; (408)973-9834 BBS.

## 70 MILLION WHITE PAGES TELEPHONE NUMBERS ON CD-ROM

**P**roCD, Inc. has released the mid-year 1993 update to their ProPhone CD Phone Book. This is a seven CD-ROM disc set with some 77 million residential and business listings largely gleaned from regional telephone company white-pages listings across the U.S.

The set includes one disc entirely of business listings, and six regional discs covering the United States: south, mid-west, northeast, pacific, mid-atlantic, and west. We found the software a little clumsy, and we encountered recurring disc read problems on several of the discs on



two different machines with two different CD-ROM drives. Searching across six residential discs to find someone is a bit of a task. But 77 million names, addresses, and telephone numbers at your finger tips is a lot of power to bestow on a single keyboard. We found enough "Jack Rickard's" to hold a convention, and similarly, this is an amazing resource to find old friends you've lost track of, or just to look up an address and a telephone number.

Directory assistance now costs 50 cents or more per query, and increasingly we're finding directory assistance operators less helpful, and more demanding that you already know what it is that you are calling to find out. In some areas, they will give you an address, while in other areas they will not. With ProPhone CD, you can look it up yourself and search by name, address, phone number, pretty flexibly. You can run a search with just a telephone number for example, to find out who it belongs to, their mailing address, and so forth. The listings indicate which year the listing was made, and you can print them out to your printer quite easily.

Most notably, in this new software version, you can also print them out to a hard disc file in line by line format, ascii delimited, mailing label format, or business card format. This dramatically increases the utility of this circular phone book in that you can move a subset into a database. This export function is quite slow - about a name per second. But you could conceivably move your city to a hard disk file and use some faster or easier search software for example.

We were pretty wowed by this concept a year or so ago when it first became available in the \$400 range. Pricing has dropped dramatically since then and while the \$129 price might still be a bit of a wag for the idly curious, there are about a zillion applications for this that come to mind that would make the price seem trivial. It is an amazing amount of information to put on a PC. ProCD, Inc. is now doing quarterly updates. The product is currently only available for IBM compatible PC's, but a Macintosh version should be available in February. ProCD, Inc., 8 Doaks Lane, Marblehead, MA 01945; (800)992-3766.

## FUBAR SYSTEMS VOICE MARKET PLACE BBS

Chris Ambler has made some headway in the BBS community with a shareware package titled **FSUUCP - Fubar Systems Unix to Unix Copy Program**. This \$35 shareware package emulates the UNIX communication functions necessary to read, write, and send mail and newsgroups to the Internet via any host provider that supports UUCP dialup connections. Version 1.4 was released in October with a new **UUCICO** dialer that may be the most advanced available in the DOS community. Our one criticism of this program is that it emulates the UNIX functions TOO well - even the configuration and file directories LOOK like UNIX on a DOS box. In any event, several BBS vendors have licensed Ambler's UUCICO program for use with their own UUCP gateway packages.

We were a little surprised at Ambler's latest project. He has developed a voice BBS package titled **Fubar Systems Voice Market Place** or **FSVMP**. We don't know quite what this is. It acts a little like a voice answering system/voice mail service, but with some decidedly BBS like features. It is certainly unusual.

The product was originally developed for the TV Connection at (818)709-8813. This is a four line voice BBS run by a video aficionado. It has a built up a community of about 400 members who each pay \$10 per month to belong. The service has two public discussion areas, the **WANT BOARD** and the **BARTER BOARD** which serve collectors of unusual videos. You can call in and post a voice mail message to the **WANT BOARD** for example, you are looking for all the "I Love Lucy" episodes featuring Fred Mertz naked, and just like a BBS, any caller dialing in can listen to the **WANT BOARD** and hear your request. They can respond privately to your private voice mail box noting that yes, they have all the nude Mertz episodes, and if you'll pay for the tapes and shipping, they'll send you a copy. You can likewise send private voice mail to any of the other 400 users. The system is apparently a money maker. Access to the demonstration area is free.

Additionally, the software has a feature we don't know whether to describe as a file area, or bulletins. You can have menu items that just play music (file downloads for the ears) or that access posted information (bulletins). Ambler runs his own system called **Central Coast Connection BBS** at (805)544-3754 and posts a listing of the Top 40 Radio and Records. He also has a list of concerts, and one area where you can select a movie, and it will tell you what theatre it is playing at and at what times.

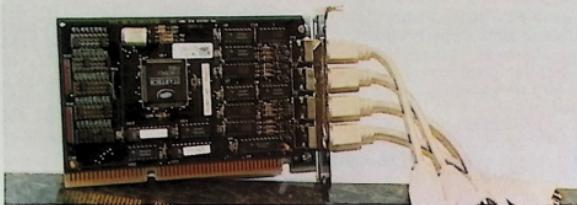
We asked Ambler how graphics came into play. He said he was toying with the idea of allowing callers to access adult .GIF images. You wouldn't actually get to see it, but it would describe the scene to you over the phone. Beyond that, it's an audio world.

The software is priced at \$549 for the two-line version, and \$1399 for a 16-line version. It also requires a bit of hardware: the Talking Technology Powerline II card which supports 2-lines per card. The cards run \$549 each, and the company plans to release a 16-line card soon. We don't entirely get it, but it could be the wave of the future (does play .WAV files as well). Fubar Systems, 1720 Diablo Drive, San Luis Obispo, CA 93405; (805)782-8000 voice; (805)544-3754 BBS. Internet: voice@toys.fubarsys.com.

## STB 4-COM SERIAL PORT CARD - A BIT OF A FIND

We recently needed four serial ports on a machine that was a bit, ahem..., engaged with various network adapters and so forth. We found a serial card from **STB Systems, Inc.** titled the **4-COM** that was about as endearing a little card as we've found.

Technically, the 4-COM provides you with four serial ports from a single surface mount Universal Asynchronous Receiver/Transmitter chip titled the **ST16554**. This little bit of magic supports four ports and is compatible with the **NS16550AFN UART** often offered as the cure to all your high-speed modem woes. The bottom line is that this card is rated for serial port speeds of up to 115,000 bits-per-second (bps).



STB 4-COM Four port RS 232 Serial Card

There were two things we loved about this little serial port card. First, it is very configurable. Each port can be configured for interrupt request line IRQ 2, 3, 4, 5, 10, 11, 12, or 15. You can put all the ports on one IRQ, each port on a different IRQ, or spread them out however you like. You can also configure each port for one of 8 port addresses (3F8h, 2F8h, 3E8h, 2E8h, 1F8h, 1E8h, 2A8h, or 1A8h).

The addresses and ports are set with jumpers on pin blocks quite normally. But each port gets a block of jumpers, port addresses on the left, IRQ on the right. The constant problem we have with setting jumpers on serial cards is that after we have used a serial card for more than about 12 minutes, we can't find the manual anywhere. Fortunately, these (ports) are laid out so logically that you don't really need the manual to tell which block goes with which port.

Another departure from the norm we found charming was the actual hardware to connect to the card. 4-port serial cards are not that uncommon. Typically, they have two AT-style serial port connectors on the card edge, with two more connector "blocks" that you connect ribbon cables from and run them to RS-232 connectors mounted on the computer case somewhere. The STB 4-COM takes a very different approach. ALL four connectors are on the card edge, but they are little round 8-pin IBM Mini DIN connectors, that have become common on pocket modems. Included with the card are four cables, about eight inches in length, with the corresponding IBM DIN connector on one end and the AT-

style 9-pin serial connector on the other. The result is a very neat little rig that is easy to connect. They're pretty proud of it with a list price of \$169. STB Systems, Inc., PO Box 850957, Richardson, TX 75085; (214)234-8750 voice; (214)234-1306 fax; (214)437-9615 BBS.

## THE LOST PAGE

In our October issue, we included a report on **ONE BBSCON**. Unfortunately, in the process of producing a magazine, an entire page of the report was omitted. It covered some fairly interesting graphic interface development. And so we include the text of the graphics section here.

## GRAPHICS

**T**he big winner from the '92 convention was **Remote Imaging Protocol** or **RIP**. In the past year, most of the BBS software developers and two major terminal programs have incorporated some semblance of RIP into their products. The three gents from **TeleGrafix Communications, Inc.** that developed RIP received one of the John C. Dvorak Awards for Excellence in Telecommunications Technology.

RIP itself was represented by a booth with the boys from TeleGrafix. It was a bit disappointing in that the much heralded RIP II specification, which was to include photo-realistic JPEG images, just wasn't ready. They showed a videotape of what it would look like if it were finished. And there was some mumbling and

rumbling among vendors that despite their setting sail on the RIP-ship, RIP itself was "a little bit broken." The main complaints centered around a lack of any error correction in the protocol, its dependence on EGA graphics, some flood-fill problems, and the miserable drawing program; all of which will be cured in RIP II we are assured.

But there were some pretty interesting RIP applications on the floor. **DeltaComm** was showing their **Telix for Windows** with RIP in a really attractive booth, and it did look very good. It isn't actually shipping yet, but it looked great. **Mustang Software, Inc.** was selling their **QModemPro** terminal program with RIP support, and it looked like they sold all they brought.

**Searchlight Software** was demonstrating their **Searchlight BBS (SLBBS)** with several games like reversi and minesweep that we don't quite get why any one would actually want to play online since they are in Windows, but they did show off the graphics capabilities, the purpose for which they were clearly intended. More importantly, Searchlight has gone whole hog for RIP and has incorporated the technology to an amazingly integrated level with their BBS package - down to clicking the mouse on characters in the message editor as part of the editing process. It looked hot.

Two other items struck us on the RIP front. **Bryant Software** has a little application off in a corner for **The Bread Board System** titled **HyperMate**. This is a text search program that incorporates RIP mouse grunt/click controls to search text files for keywords. Searching in this way isn't really a new concept, and has never been done very well on line, however, the addition of RIP to this search engine was quite impressive. It was relatively fast, and a moron could operate it - two big pluses in the online world. HyperMate also works in non-RIP mode, but not nearly as impressively. This is a glimpse of what we can do online in the future with faster modems and a bit of graphics.

The other RIP application that blew us back a bit was also an application for **TBBS** - a game of all things. First, it was produced by **Jim Maxey**, operator of the **Event**

**Horizons BBS** known primarily for breezy GIF images of ladies unfettered by the valiant efforts of the Garment Workers of America. But this was a game titled *Escape from Langour* that looked a LOT like Apogee Software's shareware game, *Escape from Castle Wolfenstein*. We played it a bit with a 9600 bps connection, and it PLAYED like *Escape from Castle Wolfenstein*. The graphics were similar, the action good. Instead of Nazis, it had goofy looking monsters - but it was really different from anything we've seen online; we had to keep checking the cables to make sure it WAS in fact working over a modem. This is why the online world needed a graphics connection.

While RIP is clearly the hot number right now, there are several other technologies showing a lot of life. One that blew us entirely away was a full BBS and terminal package titled **RoboBoard FX** - written by an 18-year-old native of Quebec named **Seth Hamilton**. Seth and his father have started this BBS software company and they aren't missing many of the moves. RoboBoard already HAS JPEG photo-realistic images and a protocol that incorporates **ZMODEM** for error correction in a pretty handsome way. It's here, it works, and it will knock your eyes out. Technologically, I would claim this RoboBoard stuff is about a light year ahead of RIP, but because RIP is so easy to implement, the other BBS developers are unlikely to even give RoboBoard FX a good looking over. For those with an ear to hear and eyes to do things right, DON'T OVERLOOK THIS PRODUCT! It wouldn't be the first superior technology to lose the standards wars in computerville, but it would be a shame - again.

The other protocol that refuses to die is **NAPLPS**. Colonel Dave Hughes has been working with some Russian programmers for nearly a year on a terminal program called **TROIKA**. He showed up with the stuff in a box ready to sell (pretty nice looking box actually) and it looks like it works - in places. Particularly interesting, TROIKA will automatically UUENCODE and UUDECODE graphics for transmission over the Internet. Unlike RIP, NAPLPS is device independent and more favorably, supports international character sets very well.

JPEG and mouse are the weak areas, and Colonel Dave says it's "in there" or will be soon. MOST INTERESTINGLY, the Troika booth was gaining a LOT of attention from the PRODIGY people who showed up at ONE BBSCON in force. Why? Well, Prodigy is quite NAPLPS based, but rumor has it that they are making some SERIOUS moves at opening up their connection. They are already beta testing their own **Prodigy Mail Manager** for offline Prodigy mail. But rumor has it they may be wanting to get some third party action going for utilities to deal with Prodigy - possibly even to the point of publishing a specification in a controlled fashion. Their two million callers, even after the dip in users from their new pricing scheme, is not an inconsequential portion of the online world. It all had Colonel Dave holding pretty enthusiastic close order drill over at the Troika booth. Another group that seemed quite interested in this product was the education sector.

A final graphics mention has to go to **Durand Communications**. These people have married graphics with the database function for Galacticomm's **Major BBS** in a way that has to be admired. You can create a database with associated photo-realistic images that show what the online future is going to look like. Currently, they are tied to a single platform, and it's not inconsequential to set something like this up. It all pinches and rubs in places, but it's clearly where we are going. Very impressive.

## NATIONAL ONLINE MEDIA ASSOCIATION

**A** new trade association, the **National Online Media Association (NOMA)**, was formed at ONE BBSCON '93 in Colorado Springs on August 27th, 1993. NOMA comprises BBS operators, Internet service providers, other online media and services, and interested persons and businesses.

NOMA's mission is to act effectively for the BBS and online service industry on matters of national importance by creating an industry presence in Washington, D.C.; assist its members at state and local levels; educate the public on the unique social, business, and legal roles of

BBS's and other online services; develop appropriate industry standards and guidelines; promote business development in the industry; and maintain and provide access to resource lists and other valuable information for use by the public and the industry.

An 11 member organizing committee was elected to develop a proposal for NOMA's charter, bylaws, membership requirements, structure, and form of leadership. The proposal is to be completed and distributed within the BBS and online services industry by November 30th, 1993.

### Members of NOMA's Organizing Committee:

Phill Liggett - Chairperson  
[liggett@delphi.com](mailto:liggett@delphi.com)

Joe Balsone  
[balsone@delphi.com](mailto:balsone@delphi.com)

Celeste Clark  
BBS (805)200-2300

Pat Clawson  
[76357.3572@compuserve.com](mailto:76357.3572@compuserve.com)

P. Victor Grambsch  
[pvictor@delphi.com](mailto:pvictor@delphi.com)

Tony McClelly  
BBS (703)648-1841

Robert Pataki  
[pugdog@delphi.com](mailto:pugdog@delphi.com)

W. Mark Richmond  
BBS (209)685-8487

Steve Sprague  
[steve.sprague@uboa.org](mailto:steve.sprague@uboa.org)

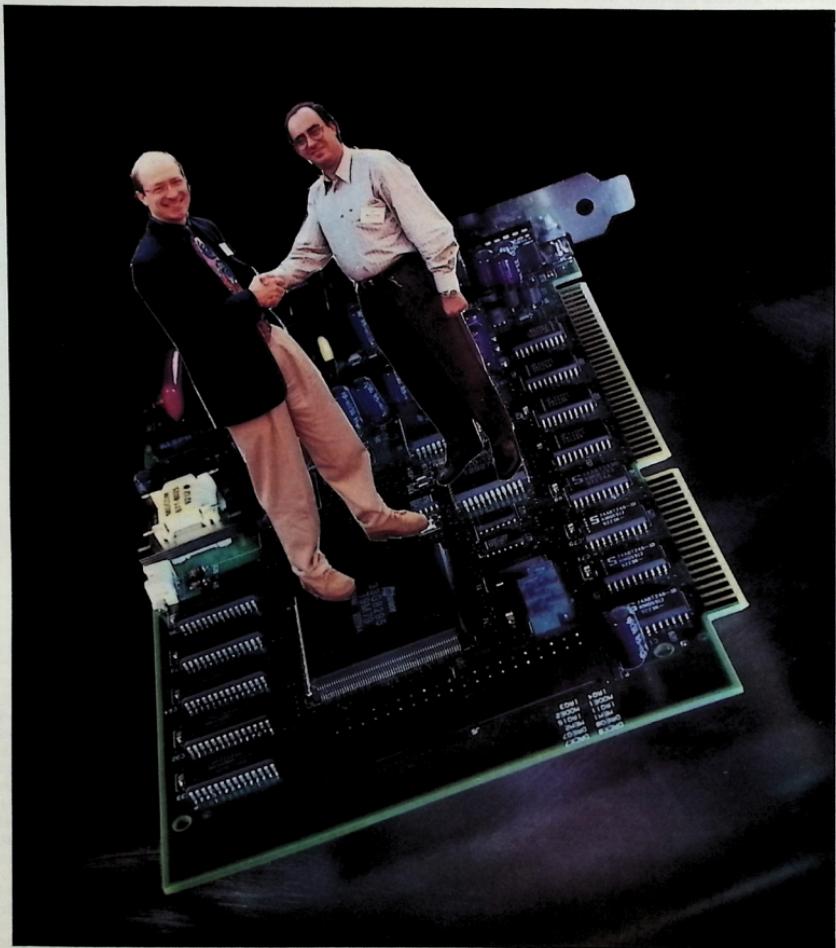
Jim Taylor  
[jim.taylor@f5.n310.z1.flidonet.org](mailto:jim.taylor@f5.n310.z1.flidonet.org)

Bill Wilt  
[wilt@aol.com](mailto:wilt@aol.com)

Discussion areas are being set up immediately for those interested in participating in NOMA's early development. An Internet mailing list is available to all those interested at [natbbs@echonyc.com](mailto:natbbs@echonyc.com) (subscribe to [natbbs-request@echonyc.com](mailto:natbbs-request@echonyc.com)). A conference area is also being made available on the Delphi information service.

In addition two advisors to the committee were named. Mike Godwin, Esq. ([mnemonic@eff.org](mailto:mnemonic@eff.org)) and Lance Rose, Esq. ([72230.2044@compuserve.com](mailto:72230.2044@compuserve.com)) both have experience in the practice of law with relation to online issues.

**IBM ♠ ACE**  
**Technology**



Eric Brockman, of IBM (L), and Bruce Zaman, of Best Data Products, Inc.

## SOUND, VIDEO, MODEM, FAX, VOICE - ALL ON A SINGLE CARD

For the past several years there has been a frenzied lunatic fringe in the engineering community that babbles incoherently about **Digital Signal Processor** technology. Basically, digital signal processors are the grown up version of DAC - digital to analog/analog to digital conversion cards. If you add some CPU functionality and some specialized filters, you have a device that is capable of looking at the real world, and converting it to digital data, in an intelligent and real-time fashion. **Very Large Scale Integration (VLSI)** chip fabrication techniques have made pretty handsome devices possible in very small packages.

Some of the chip work by Texas Instruments, AT&T, and National Semiconductor in this area is indeed impressive. These chips have grown into computational engines quite beyond what we use for CPU's in our computers - albeit fairly specialized engines.

The excitement has to do with the power, and the programmability of the things. All 12 of the people who knew how to utilize them were terribly impressed. Generally, they wound up putting a Motorola 68000 cpu behind one, adding some software in memory, and calling it a "new revolution in modems." The DSP can be programmed to perform any online data function, including fax and modem work. We suffered through several of these without damage, but with little impact either. Generally nothing of much use beyond this has been done. Perhaps we should say nothing very dramatic beyond this has been done.

The best of the breed was the **ZyXel** - featuring voice, data, and fax. The ill-fated **CompuCom** modem represents the other end of the spectrum.

In the first week of October, **IBM Microelectronics** division and **Best Data** held a "technology summit" in Aspen, Colorado, to announce an unlikely alliance to produce what may be one of the most fascinating new toys for online callers ever produced. It is called **ACE**, for

**Advanced Communications Enhancement** system, and it may finally define just what multi-media means to people with PCs. IBM ACE Project Manager Eric Broockman, and Best Data head Bruce Zaman were there for the joint announcement.

The ACE technology was developed by IBM. Rather than introduce yet another fascinating device of which 12 are destined to be sold at an exorbitant price, IBM entered into an agreement with Best Data to manufacture a very low cost circuit card capable of a bewildering variety of things. Best Data is best known for producing serviceable, but very low cost modems. They currently have a 14.4 model with fax on the shelves at **Software Etc.** for \$149.95. They also brought in Smith Micro to develop software for it. Smith Micro is best known for **Quicklink**, a terminal/fax program that has been bundled with nearly every modem model available at one time or another - over 5 million of them. We've been meaning to thank Smith Micro for some time. While Quicklink is not the top drawer and final word in terminal programs, it did seem to drive a wooden stake through the heart of Bitcom - the terminal program from hell that at one time defined the role of what BBS operators had to put up with to support new callers.

The ACE card features a DSP they are calling **Mwave technology**. It's actually not only the DSP, but a real-time multitasking operating system as well that operates the card quite independently from the PC CPU - effectively a co-processor with its own operating system and software. The result is a DSP package more akin to the DSP on Steven Jobs **NeXT** computer than just another modem.

Among its other attributes, the ACE card is a 14.4 kbps V.32bis with 9600 send and receive fax. Since all the actuals are in software, we're told that V.32 and 14.4 kbps fax are a fait accompli as well - just not in the initial product. But this device is also one of the better sound cards we've heard. At the demonstration, they had a program titled **SuperJam** playing tunes, while the IBM engineer was writing some sort of boogie-woogie nightmare for our listening enjoyment using the

**SuperJam** software. Although they had the card output playing through a pretty nice amplifier and speaker set, it produced really superb CD-quality stereo sound.

Most of the summit was spent grasping at the air to define what this ACE card was. But bit by bit, some of the capabilities became clear. It will answer the phone for you - answering machine, voice mail, the works. The demonstrator from Smith Micro clicked on a voice mail box and got a list of "letters" on the screen. He clicked on one, and it played the recorded voice message. The ACE card features ten voice mailboxes with password security. It plays music on hold. It's very nearly an entire telephone system for the small or home office. Voice quality is really quite good.

It will act as a fax server. Simply, dial in, punch in what info you want from a voice menu, and your phone number, and it will deliver the goods to you.

In theory, they claim that once the OCR software is done, this device can RECEIVE a fax. YOU can then dial in, and it will READ it to you. It will fax forward. It will fax back. It's a fax frenzy.

It will act as a full duplex speaker phone. I spend most of the day on the telephone. And I actually LIKE speaker phones. But one thing I don't like about them is the half-duplex characteristic of every one I've seen. If you talk, it cuts off the guy who's talking to you. If he talks, he can't hear you. You can't have a decent shouting match on a phone like that. IBM did some echo cancelling research in their lab in Israel. The result was about a truckload of white papers, and this one technology - full duplex speaker phones. They put it in this card.

The card features a microphone input, audio in, audio out, and telephone line jacks. True, all the sound they played went out to some pretty handsome speaker hardware, but you can't have great sound with a cruddy output, and this sounded great. With regards to sound, this is a 16-bit play and record device with sample rates up to 44 kHz. It actually supports speech recognition and text to speech, as well as speech synthesis. It also plays wavefiles and

interface for Sony and Panasonic CD-ROMs.

As to the future, they have big plans for colorfax, full motion video, JPEG/MPEG, voice over data, voice recognition, and more.

The DSP in the card is theoretically a 50 MIPS engine. It doesn't really care WHAT kind of data is in the data stream - video, audio, data, fax, - temperature if you like. The DSP basically connects the analog or "real" world to your digital machine.

IBM Microelectronics  
wants to make waves  
with this card, so to  
speak, and they've  
gotten Best Data  
to sign up for a  
very low cost production  
price.

The concurrent multitasker allows you to put this DSP to work. You can listen to your voice mail, for example, while sending a fax. The DSP handles both data streams simultaneously.

There have been do-everything combo cards in the past. Most fail. Perhaps the reason is that the developers, in a bout of wishful thinking, price the devices as the sum of the functions the card replaces. IBM Microelectronics wants to make waves with this card, so to speak, and they've gotten Best Data to sign up for a very low cost production price. The suggested retail price is \$259. Before the first one ships, they are already talking about the card being available on some shelves at \$199.95. They announced their intention to ship 600,000 of them in 1994. At that price, they just might. The first shipments begin in November, 1993.

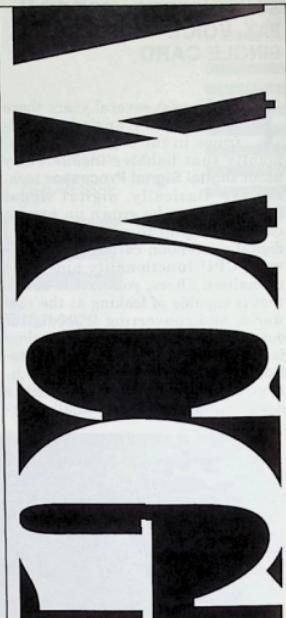
Since most of the function of this card is in software, the ACE card could wind up being either another

dorky internal fax modem, or the next neatest thing you can connect to a PC, depending on the software developed for it. One of the advantages of making ten gazillion different modem models from a handful of chipsets made by **Rockwell** and **AT&T** is that even badly engineered modems will more or less connect to each other and more or less work - they all use the same chipsets. These chipsets have allowed almost anyone to get into the modem game.

Using these powerful DSP chips has some real attraction - except the part where every software developer gets to reinvent V.Fast, V.32bis, and the handshake sequence, in their software code (the way they think it ought to have been done in the first place). The result COULD be much better modems with much shorter handshake sequences. It's probably more likely that it will result in modem chaos - visions of a matrix table on the wall showing you what modems YOUR modem will connect to in the CURRENT software release are haunting.

But as to the ACE specifically, if they can get it to do modem and fax work at all, the real attraction should be the add-ons for voice, music, and other sound applications, ultimately evolving to video and graphics processing. This spells trouble for the market of sound cards that DON'T do modem/fax work.

Smith Micro should get ACE off the ground, and IBM does have some still not very well defined plans for software developer kits. But most of the "wow" demonstrated on the NeXT machine revolved around their onboard DSP. This ACE card basically puts the same type of functionality in a significant number of PC's. If they can get some good developers behind it, this card has the potential to change the way we think about modems, data, and data processing on personal computers. We could see some "killer" telephone applications come out of it as well. The product requires a 16 MHz 80386 SX or better with 4 MB of RAM and is designed to operate with Windows and OS/2. **Best Data Products**, 21800 Nordhoff, Chatsworth, CA 91311; (818)773-9600.



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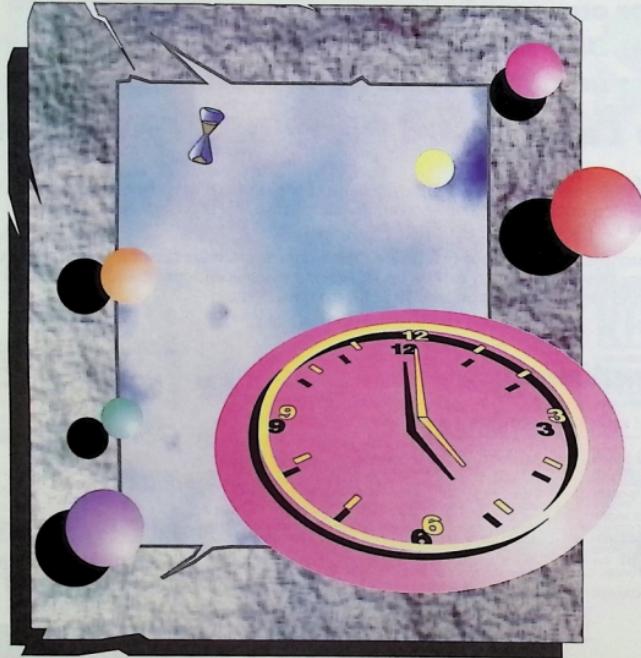
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# TIME



## On The INTERNET

by Jack Rickard

**E**ach year, sooner or later, we get around to doing "the story". The story is about time. I've had a fascination with what time it was since about age three, playing with my grandfather's railroad pocket watch, and I never have quite gotten over what time it is. Whatever time you think it is, it probably isn't "exactly" that time, and it's generally aggravating to know "approximately" anything.

In 1988, after doing a short story on the U.S. Naval Observatory BBS in Washington, I made a bit of a pest of myself at the then National Bureau of Standards in Boulder, CO, - now the National Institute of Standards and Technology. Dick Davis of NIST engineered a masterful piece of work there that allowed us to synchronize our PC's, by modem, to the cesium beam time standard in Boulder to a greater degree of accuracy than the PC clock can actually be set. As a result, we can now know what time it is "really" for the price of a 30 second telephone call to Boulder. And as a byproduct, each year the Boardwatch readership has to endure another rendition of "the story".

This year, the story gets better largely through the addition of an Internet site, some additional software to "get the time", and the "hope springs eternal" concept that I'll learn how to write this story given enough fall seasons in publication.

What time it is largely relies on a belief system that somebody get's to "say" what time it is. If you accept that time is a function of the planet's rotation before the sun, you live in chaos. If you take two steps to the east, you're technically in a different time zone. In the last century, each city in the United States, and in most of the world, kept their own time using an astrolabe to observe the sun's zenith at noon. As our communications and transportation efficiency increased, this time chaos became unacceptable. In navigation, the local time in Greenwich England had been the official time for some time. But it was actually the American railroads that caused the establishment of 24 time "zones" of 15 degrees longitude each, where the local time throughout the zone was the same.

So time is actually an agreed compromise. And the agency in the United States charged with decreeing what time it really is, is the aforementioned NIST. The institute is the official keeper of time for civilian purposes within the United States.

The actual clock is impressive in its own way, albeit disappointing to those expecting a giant clock dial. It's largely a room full of cesium beam frequency standards, all environmentally controlled, whose output is averaged by a computer. This frequency standard ticks off time much more accurately than the planet, as terra firma wobbles and ratchets noticeably in it's less than certain path through the cosmos.

To keep the accurate mark of the cesium beam frequency standard in touch with astronomical reality, NIST periodically adds or deletes a whole second, usually as the last official second of the year. These leap seconds coordinate atomic time with astronomical time, and the result referred to as Universal Coordinated Time, or UTC. (The transposition of initials is due to the French splay of wording the conventional, "what time is it?" to their vernacular, "what time it is").

The NIST online time service is titled Automated Computer

Time Service or ACTS and is accessible by modem at 300 and 1200 bps at (303)494-4774. If you dial this number with a modem, you will receive a series of ascii text strings after the fashion of:

**49272 93-10-12 06:45:41 20 0 0 50.0 UTC(NIST) \***

This string bears some explanation.

**49272** - This striking little number is the last five digits of the Modified Julian Date - a count of the number of days since January 1, in the year 4713 B.C. If you add 2.4 million to this number, you get the actual Julian date. I've found no one who really needs to know this number of days, but it does provide a unique date identifier certain never to be repeated for a long time.

**93-10-12** - This string represents the year (93), month (10 - October) and day (12 in this case).

**06:45:41** - This is the hour, minute, and second of the current UTC time - nominally at Greenwich, although not necessarily Greenwich time.

**20** - This is a two digit code indicating daylight savings time status. This code is normally 00 for standard time or 50 for daylight savings time. But it goes into a countdown when the time change approaches. In the spring, when approaching the change to daylight savings time, it counts down from 99 to 50 on the actual day daylight savings time goes into effect. It then stays at 50 until autumn when it counts down to 00 when standard time goes into effect.

**0** - This one digit code indicates whether a leap second will be added or subtracted at the stroke of midnight on the last day of the current month. A value of "1" would indicate the addition of a second, and a value of 2 would indicate the deletion of a second, i.e. the last minute of the month will only have 59 seconds. A zero value indicates there will be no change.

**0** - This second one-digit code is referred to as UT1 and it is a correction factor for converting to an older time form still occasionally popular in navigation circles.

**50.0** - This value represents the number of milliseconds ACTS is advancing the time to account for line delays through the modem and telephone lines - more about this in a moment.

**UTC(NIST)** - An acronym banner indicating what the string is all about.

**\*** - The actual time mark. Transmission of the entire ascii string is not the actual time mark. When the \* is transmitted, it represents the real time mark. This is actually a pretty cunning item. If you have software on your computer that can immediately send the on-time marker asterisk BACK to NIST, the ACTS system will measure the time from when it sent you the asterisk and when it received your response. If ACTS receives four consecutive echoes that fall within a certain range of variation, it will calculate the round trip time and divide by two. Using this value, instead of the 50 ms default value, the time mark is tailored to your current telephone line/satellite delay conditions, giving you a very, very accurate time mark. The newly corrected time mark is noted by changing from a # to a #.

To make effective use of the time service, you need a software program on your PC capable of dialing the service, reflecting the time mark, and setting your clock. A number of shareware programs exist to do just this and some of them are pretty fancy.

In fact, NIST publishes software to do just this. The source code is available and offered for not only dialup functions, but also for setting your clock via the Internet.

The NIST timeserver on the internet is located at [time\\_a.timefreq.bldrdoc.gov](mailto:time_a.timefreq.bldrdoc.gov) or 132.163.135.130. You can get a quick look at the time by entering [telnet 132.163.135.130 13](telnet://132.163.135.130). This connects you to port 13 which is the timeserver port that kicks a time mark. If you telnet to it, you will immediately be kicked off but you will receive a time string. You haven't actually been shut out, that's just how it works. And you will see the same ascii time string you would see if you dialed the telephone number.

You can also ftp into 132.163.135.130. Most notably, this ftp site has software, including C language source code, for several software programs developed under the direction of Judah Levine of the Time and Frequency Division.

In the [/pub/acts](http://pub/acts) directory, you will find the **PCTIME.EXE** and **PCTIME.DOC** programs. This is the latest NIST time program to run on IBM compatible PC's to dial the dialup service and synchronize your PC clock. They are free, and in fact you can grab the source code while you're there if

you really want to have a peek at how it works. The program allows you to configure your modem, enter the telephone number, and so forth, and dial the service to synchronize your clock. It also has a "time line" display with audio tones allowing you to visually see the time, synchronize your wristwatch, etc. In addition, there is a United States time display that shows all time zones, and a list of largish cities and their current local times. Finally, this program will keep a file record of each time you call, and how far off your PC clock has deviated from the "real" time.

In the [/pub/daytime](http://pub/daytime) directory, we found two programs, **NISTIMEN** and **NISTIMEP** for PC's that allow them to coordinate local clock time with NIST by TCP/IP - again using port 13 on the service. **NISTIMEN** is for use with PC/TCP software, while **NISTIMEP** is for TCP/IP software that uses packet drivers; the source code is available. The service also has similar programs for UNIX platforms, make files, source code, .man files, and so forth. Overall, it was an impressive library of stuff to make a time program for almost any platform. The service actually supports not only TCP/IP, but also udp/tp and NTP (Network Time Protocol).

About the only thing these guys are missing is an e-mail time server, but I guess the round trip delays there would be pretty largish to resolve.

For additional information regarding the time service, address e-mail to [time@time\\_a.timefreq.bldrdoc.gov](mailto:time@time_a.timefreq.bldrdoc.gov) or by contacting Judah Levine, Network Time Service, Time and Frequency Division - 847, National Institute of

Standards and Technology, 325 Broadway, Boulder, CO 80303; (303)497-3903.

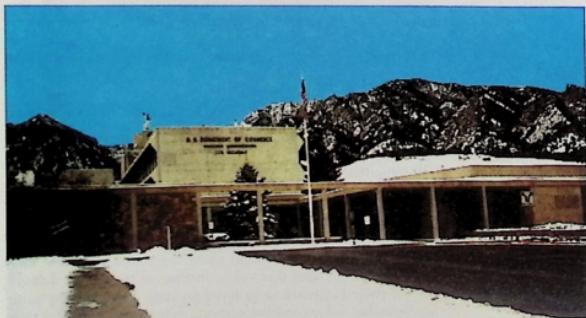
## INTERNET ONLINE BOOK STORE

**B**ook Stacks Unlimited, Inc., is one of the more interesting experiments in online sales, and a personal favorite. They've operated an online catalog of books at (216)861-0469 since March 1992, and have made exceptional use of BBS technology as it applies to selling books.

There are about a gazillion books in print, and it can be very difficult to predict which books will be "sellers" and which will be "inventory." Traditional books stores wind up with a fortune in inventory, floor space, etcetera that leads most mall stores to carry a pathetic offering of what they think is hot right now. There are a few stores, such as Tattered Cover in Denver, who fight the trend to the approbation of readers everywhere. But it is an expensive proposition to stock four floors with books of all varieties. Online, however, it's not really all that hard.

If you have drop ship arrangements that work, and quickly, you don't have to actually HAVE a book on the lot. Charles Stack has put some 269,117 million titles, at last count, online in a catalog that you can search by author, title, ISBN, etc., and by tickling a few keys with your MC/Visa card number, make a hard to find title show up on your porch in less than a week.

The system actually runs on 12 telephone lines. But the company recently announced an 8-line connection to the Internet with a pretty fetching address. Simply telnet [book.com](telnet://book.com) to make the connection, and you can order from this immense collection of titles. The system uses TBBS software and presents a colorful face to Internauts accustomed to a pretty plain interface. Additionally, they offer some discussion areas for book lovers we found interesting. Book Stacks Unlimited, Inc., 200 Public Square, Suite 26-4600, Cleveland, OH 44114; (216)861-0467 voice; (216)861-0469 BBS; Internet: [telnet@books.com](telnet://book.com).



The National Institute of Standards and Technology Building, Boulder,

## SENATOR EDWARD KENNEDY - PRESSING THE FLESH BY BBS

Government at all levels is gaining a dawning comprehension of what the online community and electronic mail mean in a world of grassroots politics.

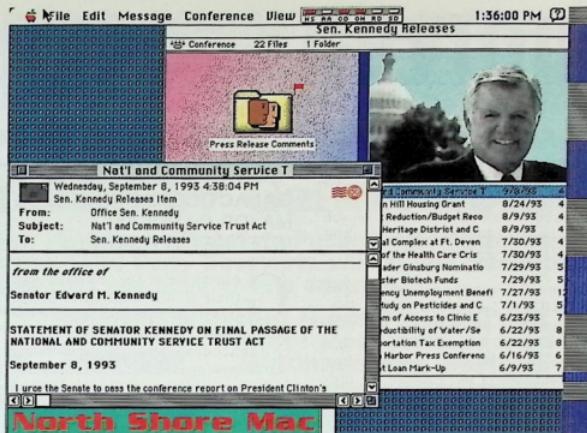
The U.S. Senate is expected to introduce an e-mail pilot program this year ultimately allowing you to send e-mail to your Senator's office. The House of Representatives has already launched a pilot program with six representatives. But Senator Edward M. Kennedy (D) Massachusetts seems to be a bit ahead of the game thanks to staffer Chris Casey.

The Senator's office is automated with a small network of Macintosh computers. Last May they turned to a small Beverly Massachusetts Macintosh bulletin board titled North Shore Mac at (508)921-4716 to help put them in touch with an increasing online constituency. The system is free to all callers - at the User ID prompt enter VISITOR and at the password prompt enter VISITOR again. Jonathan Gourd is the system operator.

The system uses FirstClass software from Softarc and presents a very graphic interface to Mac callers. PC users, however, are not left out. A program titled **FCCLIENT.EXE** is available for download that gives Windows users a graphic interface to the system as well. Note that the file is 874,369 bytes and the BBS is still running a 2400 bps modem. But for those who persevere, the view is worthwhile.

The system has a special conference devoted to Kennedy, and Casey regularly uploads speeches, statements, news releases, and monitors caller responses. Don't expect individual replies to e-mail messages as there is an overwhelming volume of them, a problem which seems to plague all in public office. But the conference is gatewayed to other bulletin boards in Massachusetts as well, including **BMUG** Boston at (617)721-5840. And according to Casey, he's looking at setting up a FidoNet connection as well.

"Massachusetts citizens are among the most technologically sophisticated



in the nation," Kennedy said. "By communicating directly with my constituents in their homes, schools, and workplaces, I hope to make my day-to-day work in Washington more accessible to the people of Massachusetts. I invite Massachusetts citizens to take advantage of this innovation in electronic democracy."

The office also distributes information via two USENET newsgroups on the Internet, *ne.politics* and *talk.politics.misc*. There is also an ftp site at the Massachusetts Institute of Technology maintained by the Intelligent Information Infrastructure Project at the Artificial Intelligence Laboratory. <ftp://ftp.ai.mit.edu>. Logon as anonymous with your e-mail address as a password, and enter **cd /incoming/Kennedy** to change to the proper directory. We found quite a list of liberal dogmata, including files such as:

Kennedy.Secures.Worcester.Biotech.Funds  
Ruth.Bader.Ginsburg.Nomination  
Faces.of.the.Health.Crisis  
Health.Care.Providers.Hearing  
Quincy.Health.Care.Hearing  
Health.Care.Summary

The last files were some 47 KB of ascii text describing a most remarkable health care plan. It is certainly interesting reading. Senator Kennedy, who chairs the Senate Committee on Labor and Human Resources, will play a major role in the Senate's consideration of President Clinton's comprehen-

sive health care proposal. Senator Edward Kennedy, United States Senator, Washington, DC 20510-2101; (202)224-3570 voice; Contact [chris\\_casey@kennedy.senate.gov](mailto:chris_casey@kennedy.senate.gov)

## ONLINE COMPACT AUDIO DISK STORE

**B**ook Stacks isn't the only inventory on the Internet. Compact Disc Connection of Sunnyvale, California, has done something quite similar in putting a catalog of 65,000 compact audio discs online containing over 250,000 songs. Again, the magic here is that the largest music store in the country probably doesn't have more than 15,000 titles in stock. The 65,000 discs CDC has put in a searchable database allows you to order by MC or Visa and make Compact Audio Discs appear at your home within one to two weeks in most cases.

The service, which has been available by modem for several years at (408)730-9015 is now reachable on the Internet via Holonet, an Internet services provider: simply *telnet holonet.net*. When the Holonet member name prompt appears, enter CDC, this will connect you with the Compact Disc Connection.

The system is operated by Ken Lovett using some custom software he developed just for this online catalog

application. It is very easy to use, and actually "guesses" your next move. While we would ordinarily find this obnoxious, it does a pretty good job of guessing. Excellence is always a superb defense.

The system also offers an impressive collection of CD reviews. The All-Music Guides provide over 25,000 reviews while the Golden Ear Reviews does about 15,000. You can search these and read what others think of that CD you were on the fence about.

The CD pricing is very good - typically \$10-\$13 for popular titles. Shipping usually adds \$6-\$7, but they waive it on orders over \$100. Unfortunately, even with fairly modest pricing, the plentitude of titles makes it a little difficult to get in and out without finding your wallet akimbo. They do ship worldwide, and the Internet connection ought to make that real for them. Compact Disc Connection, 1030 East El Camino, #322, Sunnyvale, CA 94087; (408)733-0801 voice; (408)733-0850 fax; (408)730-9015 BBS; Internet: [cdcc.holonet.net](http://cdcc.holonet.net).

## MOVIES BY MODEM

This service isn't even ON the Internet. But we seem to have developed a little bit of a "shopping from the keyboard" theme and we hate to let it die here. We found a system where you can order movies by modem. It is clearly patterned after the Book Stacks model, so much so, we suspect collusion here. But the effect is still pretty good.

Movies By Modem operates at (216)694-5736. It uses the same TBBS software and database application as Book Stacks. The system is obviously still under development with information files actually missing from the system. But the searchable database is there - for movies in VHS or laserdisk format.

The catalog features about 13,000 titles and the prices were surprisingly reasonable - \$13 to \$20. We found searches somewhat productive. But if you are looking for a database of all the oldies but goodies, it isn't there yet. We missed as often as we hit on this one. We did a search on Shogun and found the entire miniseries. We've prowled video rental places for years

looking for this to no avail, now we know why - the set is \$224. This is probably the best concept for an online store we've seen. It suffers a bit of anemia only in they don't have their database up in numbers yet. If they put 100,000 movies on this thing, it will become a national treasure.

## GALACTICOMM RELEASES MAJOR GATEWAY/ INTERNET VERSION 1.1

**G**alacticomm Inc. has revised their UUCP mail gateway for the Major BBS and reduced the price to \$249. Version 1.1 automatically uuencodes and uudecodes files, allows messages with file attachments, and supports batched and compressed newsgroup files. It supports both e-mail and newsgroups.

The UUCP mail sessions are typically run from a second machine using UUPLUS software, which is now included in the Major Gateway/Internet package.

"Major Gateway/Internet Version 1.1 gives Major BBS Sysops and users their own on-ramp to the electronic superhighway," Scott Brinker, Galacti-comm President and CEO said. "It provides across-the-board compatibility with host service providers and seamless integration with the Internet."

"Major  
Gateway/Internet  
Version 1.1 gives  
Major BBS Sysops  
and users their own  
on-ramp to the elec-  
tronic superhighway"

Free upgrades to version 1.0 are available for existing owners of the earlier version. Galacticomm, Inc., 4101 SW 47th Ave., Suite 101, Fort Lauderdale, FL 33314; (305) 583-5990 voice; (305) 583-7846 fax; (305) 583-7808 BBS

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Demo: (604) 687-1030 BBS Internet: [Imagen.bc.ca](http://Imagen.bc.ca)  
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DataSafe Publications, Inc. is a multifaceted company that develops add-on products for The Major BBS, resells Galacticomm software and runs it's own successful BBS. Whether you are setting up a Local Entertainment BBS, Corporate Support System or a National Online Service, we can help. Give us a call when you are ready to setup your system or when you need to expand your existing system.

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Global Power	HelpMan	Novatek
Omni-Mall	POS Dial Module	POS Dev Kit
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The Newsroom	Sysop Notepad	Text File Editor
	TradeWars 2002	

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	Online Employment Service	

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# Internet UUCP Host List

<b>BBN Technology Services</b> NEARnet 10 Moulton Street Cambridge, MA 02138	\$2,890 year \$1,000 registration fee	<b>MCSNet</b> 3217 N. Sheffield Chicago, IL 60657	\$2.00 hour first 5 hours \$1.00 thereafter in a calendar month \$15.00 month minimum charge. \$10.00/setup
Voice# (617)873-8730 Fax# (617)873-5620 (internet) nearnet-join@nic.near.net		Voice# (312)248-UNIX Fax# (312)248-8649 BBS# (312)248-0900 (internet) info@mcs.com	
<b>CICNet</b> 2901 Hubbard Street Ann Arbor, MI 48109	\$35 month \$2.50 hour prime time \$2 hour non prime time \$175 registration	<b>Merit/MichNet</b> 2901 Hubbard Pod G Ann Arbor, MI 48105	\$35 month \$40 registration
Voice# (313)998-6103 Fax# (313)998-6105 (internet) info@cic.net		Voice# (313)764-9430 Fax# (313)747-3185 (internet) info@merit.edu	
<b>Clark Internet Services</b> 10600 Route 108 Ellicott City, MD 21042	\$30 month \$264 annual \$25 registration	<b>MidNet</b> 501 N Tenth Rm 124 Lincoln, NB 68588	\$60 month \$150 registration
Voice# (800)735-2258 (Maryland Relay Service) Then Give the following # (410)730-9764 Fax# (410)730-9765 Data# (410)730-9785 (internet) info@clark.net		Voice# (402)472-8971 Fax# (402)472-8486 (internet) clarnham@uni.edu	
<b>CNS Internet Express</b> 1155 Kelly Johnson Blvd. Suite 400 Colorado Springs, CO 80920	\$10 monthly minimum \$2.75 hour \$8.00 hour 800 service \$35.00 registration	<b>MRNet</b> 511 11th Ave South Box 212 Minneapolis, MN 55415	\$55 month \$150 registration
Voice# (719)592-1240 (800)748-1200 Fax# (719)592-1201 (internet) info@cscns.com		Voice# (612)342-2570 Fax# (612)344-1716 (internet) dfazio@mr.net	
<b>Doyle Monroe Consultants</b> 267 Cox Street Hudson, MA 01749	Free Thirty day trial period. Variety of plans starting as low as \$5 a month, will never exceed \$150 a month	<b>NETCOM</b> 4000 Moorpark Avenue Suite 209 San Jose, CA 95117	\$25 month low volume mail \$45 month news & mail feed. \$60 month Telnet & FTP \$50 registration
Voice# (508)568-1618 Fax# (508)562-1133 (internet) info@dmc.com		Voice# (408)554-8649 Fax# (408)241-9145 (internet) info@netcom.com	
<b>Holonet</b> 46 Shattuck Square Suite 11 Berkeley, CA 94704	\$6 month \$2.4 hour \$50 registration	<b>New Mexico</b> TechNet 4601 Osuna NE Suite 103 Albuquerque, NM 87109	\$50 year
Voice# (510)704-0160 fax# (510)704-8019 (internet) info@holonet.net		Voice# (505)345-6555 Fax# (505)345-6559 (internet) newsletter@technet.nm.org	
<b>IDS World Network</b> 3 Franklin Rd East Greenwich, RI 02818	\$15 month \$80 6 months \$150 year	<b>NovaLink</b> 79 Boston Turnpike #409 Shrewsbury, MA 01545	\$35 month \$30 registration
Voice# (401)885-6855 Fax# N/A (internet) info@ids.com		Voice# (800)274-2814 Fax# (800)274-2814 (internet) info@novalink.com	
<b>Maestro Technologies</b> 29 John St New York City, NY Voice# (212)240-9600 BBS# (212)240-9700 (internet) staff@maestro.com	\$100 month \$125 setup		

## Internet UUCP Host List

**PANIX**

Voice# (212)787-6160  
(internet) hostmaster@panix.com

\$2 hour  
\$10 month for a user account

**Spectrum Online Systems Inc**  
Jim Welch  
2860 S Circle Dr  
Suite 2202  
Colorado Springs, CO 80906

\$1 hour  
\$125 monthly cap  
no setup fee

**PREPnet**

305 S Craig Street  
2nd Floor  
Pittsburgh, PA 15213

\$1,000 year  
\$325 registration  
\$40 month maintenance fee

Voice# (719)576-6845  
(internet) jmw@sosi.com

\$35 month  
\$1 hour  
\$50 registration

Voice# (412)268-7870  
Fax# (412)268-7875  
(internet) twb+@andrew.cmu.edu

**RAIN**  
Box 2683  
Santa Barbara, CA 93120

\$50 month  
\$200 registration

**The Well**  
27 Gate 5 Road  
Sausalito, CA 94965

Voice# (415)332-4335  
Fax# (415)332-1669  
Data# (605)899-8600  
(internet) rain@rain.org

Voice# (415)332-4335  
Fax# (415)332-1669  
(internet) info@well.sfc.us

\$36 month  
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## Feature and Price Comparison for an 8 node BBS on a single 486 PC

	<b>Synchronet</b>	<b>Wildcat!IM</b>	<b>PCBoard/M</b>	<b>MajorBBS</b>	<b>TBBS</b>
<b>Node license</b>	\$199	\$799	\$440	\$508	\$895
<b>Multitasker</b>	\$200	\$200	\$200	Yes	Yes
<b>8 port I/O</b>	\$300	\$800	\$995	\$575	\$500
<b>Multinode chat</b>	Yes	Yes	Yes	Yes	Yes
<b>Multichannel chat</b>	Yes	Extra	No	Yes	Yes
<b>Private key by key chat</b>	Yes	No	No	Yes	Yes
<b>Offline reader support</b>	Yes	Yes	Extra	\$199	\$99
<b>QWK networking</b>	Yes	Yes	Extra	No	Yes
<b>FidoNet import/export</b>	Yes	Yes	Yes	Yes	Yes
<b>Send/receive Mail</b>	Yes	Yes	No	No	Yes
<b>PostLink (RIME) support</b>	Yes	Extra	Yes	Extra	No
<b>RIPscript GUI support</b>	Yes	No	No	Extra	No
<b>Novell/DOS LAN support</b>	Yes	Yes	Yes	Yes	No
<b>976/900 billing support</b>	Yes	No	No	Extra	Extra
<b>Real-time node activity alerts</b>	Yes	No	No	Yes	Yes
<b>Enhanced CD-ROM support</b>	Yes	Yes	Yes	Extra	Extra
<b>Multuser SDK</b>	Yes	No	Extra	Extra	Extra
<b>Incoming FAX support</b>	Yes	No	No	No	No
<b>Chat between doors</b>	Yes	No	No	Yes	No
<b>Bidirectional file transfers</b>	Yes	Yes	Yes	No	No
<b>Multiple user command sets</b>	Yes	No	No	No	No
<b>Supports DOS doors</b>	6 types	1 type	3 types	No	No
<b>Hierarchical msg &amp; file areas</b>	Yes	No	No	No	No
<b>External transfer protocols</b>	Yes	Yes	Yes	No	No
<b>Total price</b>	<b>\$699</b>	<b>\$1799</b>	<b>\$1635</b>	<b>\$1282</b>	<b>\$1494</b>

Prices don't include CPU or modems. Features and prices compiled from vendor supplied information 2/93, are subject to change without notification. Wildcat!IM, PCBoard/M, MajorBBS, TBBS, QWK, FidoNet, PostLink, RIME, RIPscript, Novell, and DOS are trademarks or their respective companies. Commercial or Shareware Tools/Scan utilities are required for some message network technologies.

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# ACCESS TO GOVERNMENT

## STATE LEGISLATIVE INFORMATION, ONLINE

by Jim Warren

We can impotently whine and rage about "the law" — or we can change it. To change it requires knowledge of and access to the legislative process — preferably before proposed bills are enacted.

### Survey of States

Last year, the National Conference of State Legislatures (NCSL) conducted a series of surveys of the state legislatures in all 50 states, the District of Columbia and Puerto Rico, to ascertain each legislature's policies regarding access to their computerized legislative information. Their findings were reported in, "Online Access to Legislative Data Bases, Survey Report," dated December, 1992, on which this column is based.

### Online Access is Increasing

During the 1970s, only three state legislatures permitted dial-up access to some of their legislative information. By 1985, eleven legislatures allowed some kind of online public access. That number grew to 21 states by 1990, and was 33 by the end of 1992, and 42 states provide public-information offices that have electronic access to legislative databases.

Electronic public access policies of legislatures have been changing slowly — but may escalate due to:

1. The rapidly-maturing public networks (Internet, Fidonet, etc.),
2. The ability to provide statewide access at very little cost using a BBS or small file-server, and one or several of the public networks,
3. The Clinton/Gore administration's emphasis on developing a national information infrastructure,
4. Increased net-based organizing and citizen activism.

### What Could Be Available

Information used by state legislators, legislative staff, lobbyists and

concerned citizens is much more than merely copies of bill. It typically includes:

Text of bills and amendments,  
History of each bill,  
Status of each bill,  
Indices of bills,  
Vote records on each bill, and  
Pass/fail results of each vote in each committee and for each floor vote in each house of the legislature.

But there is much more information essential to participating in the legislative process, other than just bill text and vote results, e.g.:

Budget data — historical and prospective,  
Legislative calendar,  
Committee hearing schedules,  
Lists of committees, committee members and committee staff\*, and  
Legislative rules of procedure — although such rules are commonly waived in the heat of battle or proximity to vacations and other deadlines.

Additionally, legislative workers and insiders *always* have lists of lobbyists, local- and state-level interest groups and directories for the state's executive agencies and judiciary (the other two branches of government), plus numerous federal contacts. These are often computerized but are usually not available to the public in electronic form. So far.

And finally, new legislation is always built on the basis of current law, represented by federal and state Constitutions,  
Enacted statutes ("codes"),  
Administrative policies and rules,  
Case law — court interpretations of the constitutions and statutes, and  
Legal opinions issued by the state's Attorney General — opinions that interpret the applications of often-vague and often-ambiguous laws and are typically binding on state and/or local agencies unless and until overturned in court or by later legislation.

### \*-Crucial Names: Legislative Staff

Contrary to naive impression,

elected legislators almost-*never* write the legislation that they "author", nor its amendments.)

Much of it is actually first drafted by an interest-group — that might be the League of Women Voters, PTA, Common Cause, etc. That is, "interest groups" may be "public-interest groups" or "self-interest groups" — and which category a group is in is often in the eye of the beholder.

But functionally, the most important individuals in the legislative process are the legislative staff — legislators' aides and committee staff and consultants. They are the most accessible for citizens. For most citizens and groups, these staff are the best and most effective communications channels for reaching and persuading their legislators — except, of course, for big-bux contributors and those who appear to wield significant voting or publicity power. (Note: Most legislators don't yet realize the publicity power of the nets and BBSs.)

Senior aides and consultants typically exercise great control over the details and language of legislation, within whatever bounds are set by their legislators. Staff are the one who draft the actual language of legislation, working at the direction of their legislator or committee and coordinating the language with the legislature's legal counsel.

In general, one can be most effective with least effort by identifying and working successfully with senior legislative staff.

### Fees for Access

Most legislatures that allow public access to any of their electronic information require fees — paid either to them or to private information distributors that, in turn, pay fees or royalties to the legislature or state.

Few state legislatures have adjusted to the notion that anyone other than well-funded lobbyists and wealthy special interests might desire such electronic access.

The New York State Legislature, for instance, charges \$500 per hour. Furthermore, they refuse to provide electronic copies of their computerized public records to distributors. A Legi-Tech spokesperson said New York even passed a law prohibiting private-sector electronic distribution of their public legislative records, but it was shot down in court by the McClatchy newspaper group that owns Legi-Tech and a number of newspapers including the powerful *Sacramento Bee*. So now, each day, these private information-providers pick up paper copies of New York's public legislative records that were printed from the legislature's computer files, scan them back into machine-readable form, and make them available for a fee.

Modern public access for the wealthy caste; economically lower-caste citizens can just be damned, relegated to paper copies delivered too late for anything except for fury. Apparently New Yorkers are politically very docile — so far.

Commercial distributors sell online access to legislative information in 17 states. Two services, State Net and Commerce Clearing House's ELSS, provide access to at least bill-status information for all 50 states.

Statutes for all 50 states are available from Mead Data Central's LEXIS or West Publishing Company's WEST-LAW legal information systems — for a healthy fee. In comparison, the federal statutes are available from the Government Printing Office on a CD ROM for \$30.

Two of the largest commercial distributors are State Net, 1900 14th St., Sacramento, CA 95814; (916) 444-0840, and Legi-Tech, 1029 J St. #450, Sacramento, CA 95814. State Net provides extensive information about all states' legislatures. Legi-Tech provides comprehensive information about New York and California legislatures.

State Net likes to have a 2-year contract under which they will provide access for 2,880 minutes — that's the way they stated it — for a mere \$4,200, toll-free. Legi-Tech, without a contract, charges \$175 per hour, and the caller pays the phone charges.

Of the 36 states that provide online

access to some of their legislative data, over a third of them charge the same rate for access by other government agencies as they charge for private-sector access.

Yes, most of the legislatures directly or indirectly require that their own state executive and judicial offices, and their own cities, counties, school districts, parks districts and other local agencies, pay handsome fees for modern access to the legislature that controls them. Off-budget loot for the legislatures.

## Free, Equal Access

Other states, such as Hawaii and Wisconsin, provide some kind of public electronic access free of charge. Hawaii does so through their own, tax-underwritten, multi-function, state-wide computer network called Hawaii INC (voice/808-586-4636).

And, if California's Governor signed Assembly Bill 1624 into law, it appears that California will become the first state to offer access to essentially all public legislative files, without charge by the state, via an Internet file-server. If it passes, there are already plans underway to make the files accessible via ftp, gopher, WAIS, probably WWW, possibly in USENET newsgroups and broadcast through a gateway into Fidonet — implemented by online activists if the state's Legislative Data Center doesn't do it. Next month's column will report details.

## The Brain-Damaged States

Nineteen state legislatures do not provide state-operated public electronic access to their computerized legislative information: Arizona, Bill and Hillary's Arkansas, California (so far), BoardWatch's Colorado, Connecticut, Georgia, Idaho, Mississippi, the Missouri House of Representatives, North Carolina, Ohio, Pennsylvania, Rhode Island, NREN Al's Tennessee, Texas, House Speaker Foley's Washington, Wyoming, Puerto Rico — and, of course, the backwards District of Columbia un-state.

26 states don't provide public electronic bill-text; 44 don't provide budget get information; and, 25 don't provide committee hearing schedules.

Some states provide online access to legislative information for some other branches of their state or local government, but exclude public access.

## Sources

NCSL is at 1560 Broadway #700, Denver CO 80202; (303) 830-2200. Legislative Information Services person familiar with access-policy issues is Program Director Jo Anne Bourquard. Their technical type, who also tracks computer developments within the legislatures, is Data Base Manager Steve Thergesen.

The NCSL sponsors a National Association of Legislative Information Technology that concerns technology issues. NCSL also participates with some other national governmental associations in a Communications and Information Policy Committee that addresses policy issues.

And, the Council of State Governments has a National Association of State Information Resources Executives.

Online public access to complete legislative information can greatly assist legislators and the public whom they serve — but most legislators and their staff are amazingly ill-informed about the public nets and their explosively-expanding potential.

We — working with candidates and elected officials, and especially using our potent communications tools — can mandate online public access. All it takes is time and effort.

*Jim Warren (345 Swett Rd., Woodside CA 94062; (415) 851-7075; Internet: jwarren@well.sfc.ca.us) is a columnist, lecturer, and activist. He began working as a minicomputer programmer in 1968, and has worked in personal computing since before the phrase was invented. He founded InfoWorld, the Computers, Freedom & Privacy conferences, was founding Editor of Dr. Dobb's Journal, founding host of PBS television's "Computer Chronicles" and is a Board member at Autodesk, Inc. He holds three graduate degrees and has taught computing at Stanford, San Jose State, and San Francisco State. - Editor*

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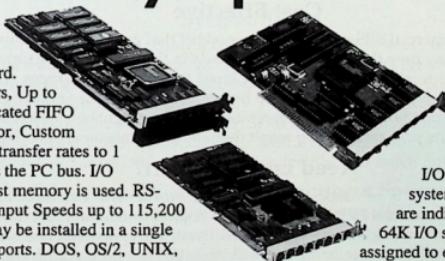
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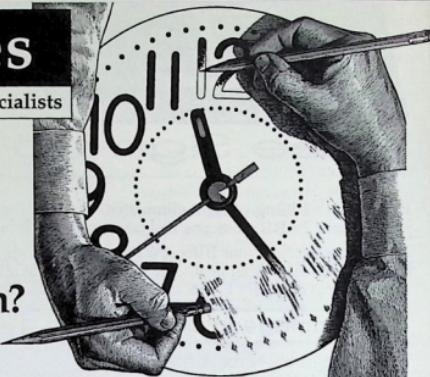
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### QuickSearch

The ultimate in text file search programs, QuickSearch is already proven itself to be the ideal tool for any customer or sales support system. QuickSearch easily creates an index of over 11,000 text files in up to 99 directories and allows a user to perform multiple boolean criteria searches to find matches and present them for display or download. It sounds simple, and it is! And it is unbelievably fast. This program is a must if you have a need for fast information retrieval. Easy to install and even easier to maintain, it can quickly put an end to repetitive questions and provide information to your users and customers quickly.

### SystemMaster

SystemMaster allows COMPLETE and easy control of any TBBS/TDBS system. It features the ability to store and launch any TBBS command from a database of individual commands or from Program Groups which allow sequential execution of specific commands that YOU group together. You can even sort the commands or time their execution speed. It has Context sensitive help which automatically pops-up in a window whenever you add or edit a TBBS command, it provides a complete suite of easy to use SYSOP and DOS commands and facilities far beyond what you've ever seen before in a TBBS/TDBS, it provides a COMPLETE TDBS control area which allows you to create, modify, pack, zap, search and edit any TDBS database and index file, and much much more!

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# MACINTOSH BBS NEWS

by Bill Gram-Reefer

## RESNOVA TO MARKET MACKENNEL FIDONET MAILER



(Merrifield, VA) and **ResNova Software** (Huntington Beach, CA) have announced plans to distribute **MacKennel**, a new FidoNet mailer for Macintosh written by **Craig Vaughan**, author of the popular **MacWoof** point software.

MacKennel will offer three levels of price/performance for Macintosh host systems. Version 1, available now, is a basic point mailer to retail at \$75. It supports manual or automatic session operation, easy integration with most Mac BBS programs, provides unlimited echo support, performs .ARC and .ZIP mail processing, supports both 4D and pointnet addressing, Wazoo, and FTS-0001 sessions.

With an October shipping date, Version 2, a FidoNet End-Node Mailer costing \$150, includes all of the basic features of Version 1, plus the ability to operate as a front end for any BBS that accepts

ADSP/PPC logins, or as a stand-alone mailer. Operations can be fully automated on a weekly or daily basis, while being configured to allow for continuous crash-mail operation. Echo distribution in Version 2 is limited to a single hub/node, while supporting routed netmail via a specified hub/node.

Version 3, scheduled for release late in 1993, is positioned as a full FidoNet Node/Hub mailer with a price tag of \$250. Including all of the features of Version 2, this top of the line provides an integrated node list processor, fully zone aware with both direct and host routing, and supports points and/or other nodes for echo mail distribution or hubbing. Fully System 7 and 32-bit compatible, all versions of MacKennel require Apple's Communications Toolbox, System 6.0.5 or later, and a minimum of 2-Mb RAM.

Ease of use and complete FidoNet compatibility were the chief goals for Craig Vaughan as he designed MacKennel. "My primary concern is for MacKennel to be fully compliant with FidoNet FTSC protocols," said Vaughan. "I'm hoping to provide seamless and transparent file transfers so the Mac hosts running MacKennel can live peacefully with DOS nodes and PC-formatted mail."

Additionally, by providing three increasingly complex products, Vaughan believes he can provide better support to Mac sysops with varying levels of expertise and needs. "Version 2 provides everything a sysop needs to be a standard node on FidoNet." According to Vaughan, if a sysop is already Tabby compatible, Version 2 can easily be dropped into place providing one integrated program rather than having to fine tune a series of smaller programs. In comparison to Tabby with its suite of programs, MacKennel, as one pro-

gram, will also offer other benefits to sysops including unlimited distribution nodes, and the ability to massage files using third party utilities before import.

The plug and play aspects of MacKennel may frustrate some sysops who want to tweak or fiddle with their system, noted Vaughan, but it beats the frustration of having to set up a half-dozen smaller programs. Yet, there is plenty of room for customization. MacKennel can be configured as a front-end or back-end system. Multiple line hosts using MacKennel can either dedicate a line for mail processing or act as a serial-to-ADSP gateway. In fact, MacKennel can operate on a LAN without even using a BBS, in effect, acting as a mail processor supporting multiple points. Version 3 is targeted at sysops with heavy duty administrative needs at the level of zone coordinator so Mac sysops need not switch over to a PC to perform those tasks.

MacKennel's increased speed will also be apparent to users with its 8-block Z-modem throughput and batch processing. While a **ZZWoof** freeware point program is now in beta and will offer zip decompression support for MacKennel, Vaughan announced a January target date for the release of **MacWoof 2.0**, which will support MacKennel as well as offer a much-discussed interface, power, and performance improvements. Contact ResNova Software: 5001 Argosy #13, Huntington Beach, CA 92649; (714) 379-9000 (voice).

## SOFTARC TO RELEASE FIRSTCLASS 2.5

Scheduled for release in the 4th Quarter '93, **SoftArc** (Scarborough, Ontario) has added many new features to its **FirstClass** group communications software. Most

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Whether you need local or wide-area messaging, whether you want shared public conference mail or point-to-point E-Mail, WILDCAT! IM can help you do it. Whether you need a simple QWK-compatible network, or our optional MHS gateway, WILDCAT! IM helps you move the mail.

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### Yes, We Do RIP

RIP (Remote Imaging Protocol) graphics come standard with WILDCAT! IM. Users can select menu commands with the mouse, and see graphics comparable to or better than those found on Prodigy or America Online. And we don't make your users give up their favorite professional communications software, either. RIP graphics are fully supported by QmodemPro.

### Yes, We Do CD-ROM

Of all the new computer hardware developments of the last decade, none had more impact on the BBS world than CD-ROM technology. CD-ROMs are a perfect way to add huge numbers of files to your BBS. Instead of making you use third-party doors or expensive add-on modules to support a CD-ROM, WILDCAT! IM treats it just like another hard drive, showing the CD-ROM files as part of your regular file download areas.

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notable is the addition of cross-platform graphical access to **SQL** and **DAL** databases through the program's graphical forms system. The database access forms are fully customizable with the FirstClass forms editor to be released with V.2.5. The editor will allow FirstClass administrators to edit existing message forms, or create new ones. Distribution of the forms may be gatewayed among FirstClass servers, as well for networked access. Platform-independent, the forms support check boxes, pop-ups, and function identically on both Windows and Macintosh client programs.

Other new additions to FirstClass 2.5 include: **Unsend**, a feature that can remove a sent message from conferences or a recipient's mailbox to allow for further editing. **Delivery Receipts** will now be generated when a message routed to another server is received or has been read with the receipts traveling between gateways. **Message Priorities** can influence gateway runs and are indicated in bold in message lists. Encryption is also supported in FirstClass 2.5 and is performed at the server level. Encrypted messages can be password protected.

While FirstClass currently supports gatewayed mail between two servers and conference replication among an infinite number of networked servers, the new version adds several server-to-server upgrades. **Multi-Hop Routing**, provides the ability to send mail directly to users on any FirstClass server in a distributed mail system, even a large system like **OneNet**. Mail can now travel through any number of servers to find its appointed destination. **Directory Sync** has also been added as a base function of the FirstClass server, allowing names at remote sites to validate on local servers. **User Name** aliasing allows for user names to appear as first-name lastname, dropping the formerly required site and domain

suffixes, so a user can write to another user in a distributed mail system, while only knowing the person's name. SoftArc, 805 Midfield Road #102, Scarborough, Ontario, Canada M1V-2T9; (416) 299-4723 (voice).

## SPIDER ISLAND ADDS WINDOWS CLIENT TO TELEFINDER

Spider Island Software (Irvine, CA), developer of **TeleFinder Group Edition BBS** software for Macintosh, recently announced it is shipping TeleFinder User for Windows. When used in conjunction with TeleFinder host software running on Macintosh computers, TF User for Windows provides sysops with a powerful, cross-platform, graphical-interface BBS that fully supports both Macintosh and Windows communications.

TF User for Windows works with any IBM or compatible PC running Microsoft Windows 3.0 or higher. Supporting Microsoft's multiple document interface (MDI) and common user access (CUA) interface standards, the program's icons, menus, and windows deliver point-and-click, drag-and-drop ease-of-use for trouble-free telecommunications with thousands of commercial hosts, PostScript service bureaus, and public BBSs.

TeleFinder User for Windows lets PC users easily access and take full advantage of TeleFinder's fast z-modem file transfers, electronic mail, multi-node chat, and conferencing capabilities. The program includes a full-featured text editor for offline reading and composition of messages, modem setup files, automatic logons, and a Find File function that helps callers quickly find the files they want to access or download.

Available direct from Spider Island, TeleFinder Group Edition 3.1 retails for \$425, and includes the host program, documentation, and an unlimited user license to freely distribute the Mac-based client software. TF User for Windows is available to sysops for an additional \$250. This option enables TeleFinder hosts to support incoming TF User for Windows calls and also includes an unlimited user license to distribute the client program, which is free to end-users and available for download on all major online services, AppleLink, local BBSs, and from Spider Island's support BBS.

Capable of managing up to 32,000 users, TeleFinder 3.1 runs on all Macintosh computers, is 32-bit clean, **System 7 "Savvy."** It contains full Balloon Help, and is AppleEvents aware for customized system integration. All of Spider Island's products carry a 30-day money-back guarantee. The company provides technical support to registered users by telephone and via its own support BBS. Spider Island can be reached at (714) 669-9260 (voice); (714) 730-5785 (bbs).

## MAC BBS OF THE YEAR

Let's hear a round of applause for Berkeley Macintosh User Group's **Planet BMUG**, considered by many as the archetype Macintosh BBS system. Yet, despite a furious ballot-box-stuffing campaign led by executive director Steve Costa, The Planet could only manage fourteenth-place showing in this magazine's annual BBS beauty contest. Only one other Mac-based BBS, **BMUG Boston**, (the group's East-Coast contingent) finished in the top 100 (91st); a sad showing once again for Macintosh BBS systems in a world, (and magazine), dominated by the irrational convictions that ALT-slash-H means ease-of-use, and that NAPLPS may yet prove to be the graphical user interface of choice

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come the 21st century, if we'd only give it a chance.

Regardless, BMUG is composed of over 10,000 members worldwide and offers the most complete quarterly newsletter any user, nerd, or ingenue could ever ask for. Weekly meetings in the East Bay and San Francisco attract 150-200 users per event, while over a dozen special interest groups meet monthly to discuss networking, Internet, and other issues. The group's motto is, "We're in the business of giving information away." Planet BMUG, as a BBS, boasts a lineage back to 1984. Currently offering 17 lines and piloted by **Dong-Gyom Kim**, a seriously overworked sysop if there ever was one, The Planet is a OneNet member that includes FidoNet and Internet access.

A busy place, the New Uploads section attracts callers like moths to a fire. With proximity to Apple in the Silicon Valley and sporting many contacts within the industry, the Uploads section is a beehive of new products, demos, hacks, and Newton programs looking for a machine that they can work on. News and rumors, too, come to The Planet daily with many of its members who are writers in computer magazines.

The networked Internet Q & A section is ably moderated by **Bernard Aboba**. Other notable tech conferences include a variety of Usenet Newsgroups, and a myriad of networked Mac conferences including modems, scripting, network support, graphics, games, literature and more. Reflecting the diversity of the region, The Planet is also culturally diverse. For instance, it acts as home to Bay MacWomen, a networked conference providing up-front conversation on women's issues. An active consultants group and help wanted sections keep things honest. But in general, the claim to fame of The Planet, stemming from its affiliation with BMUG, is the willingness of participants to help, while a high

caliber of knowledge is readily available.

But times change. By the time you read this, The Planet will have installed many new non-technical conferences to even better reflect the diversity of its members' interests. A good thing, since the needs of users have expanded greatly since the early days of BBSing, when it was dominated by "how do you do" technical questions. Now, "how do you do" can be more socially relevant in terms of interaction on a variety of topics. This comes from the fact, of course, that Mac-based graphical-user-interface BBS systems, such as The Planet's customized FirstClass host, offer non-technical users much easier access to an online system. It follows that non-technical types, who want more from their online experience than adult GIFs and steamy chat sessions, would enjoy non-technical conferences on a variety of subjects. So, after a massive and open

polling process, Steve Costa, et al, have lined up a new list of conference topics and services to its members including: local politics, theater, restaurants and events. A grand time will be had by all, I'm sure.

Membership driven, the user will have to pay a modest yearly membership fee to access The Planet: BMUG 1442-A Walnut Street #62, Berkeley, CA 94709; (510) 549-2684 (voice); (510) 849-9026 (fax); (510) 849-2684 (bbs).

*Bill Gram-Reefer, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications. Bill has been writing about Macintosh computers since 1984. E-mail Bill at: wk05156@worldlink.com*

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The AQUILA BBS Team (Left to right: Kevin & Kristy Behrens, Steve Williams, Chris Babb)

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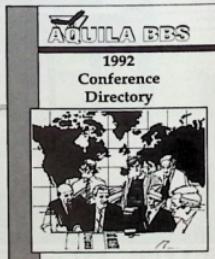
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# EDUCATION LINK

by Bill Gram-Reefer

## K12NET CONTINUES EXPANSION



Starting with two BBS nodes in June of 1990, K12net now boasts almost 200 nodes located in North America, Australia, Europe, and Russia. Described by its founder, Jack Crawford, educational technology advocate for the Wayne-Finger Lakes Area Teacher Resource Center, as a "grassroots international school network," K12net is a worldwide collaboration of free, school-based electronic bulletin boards which share many common themes dedicated primarily to the K-12 curriculum. A message entered in any one of K12net's 33 curricular conferences and project channels is echoed to every other K12net BBS around the world where any teacher or student may read and reply to it. This provides global connectivity and a focused platform for practicing reading and writing skills, and the sharing of curricula.

Using the FidoNet backbone, schools can easily and inexpensively plug into several dozen conferences and projects to benefit students and teachers alike. Echoes include: business education, computer literacy, health and physical education, language arts (French, German, Spanish, Russian), math education, music performance, news, science and social studies, as well as techni-

cal conferences on working with gifted children, and separate chat channels for teachers and students.

K12net is "militantly free," argues Crawford, a self-described technology evangelist. The phrase means, "it's something totally accessible to anyone with a computer and a modem that gives them access to a local electronic bulletin board." For further information about K12net in general, sources of network feeds or setting up your own low-cost BBS, write Jack Crawford, 3501 County Road, Stanley, NY 14501; (716) 526-6431 (voice); 1:260/620 FidoNet; [jack@k12net.org](mailto:jack@k12net.org) (Internet).

## HUMANITIES COURSES ONLINE

The California State University at Dominguez Hills now offers online Humanities courses. Via the Internet, students now have the option of taking selected courses by computer conferencing and electron-

ic mail. Using their computers and Internet access, students can contact instructors, send assignments, receive course guides and materials, instruction, advice and comments from instructors, converse with fellow classmates, do online research, as well as access other online services. The system allows for live group conferencing for discussion of material, and one on one chat.

Internet accounts are assigned to students who enroll in the Defining the Humanities computer conference courses at the beginning of each term. Courses offered in this series include seminars on Literature, Music, History, and Philosophy. Course fees are the same as those for the regular delivery method. Personal faculty contact is maintained via electronic mail, telephone, cassette, and, whenever possible, personal contact. You can contact the External Degree Program electronically at: [huxonline@dhvx20.csudh.edu](mailto:huxonline@dhvx20.csudh.edu) (Internet).

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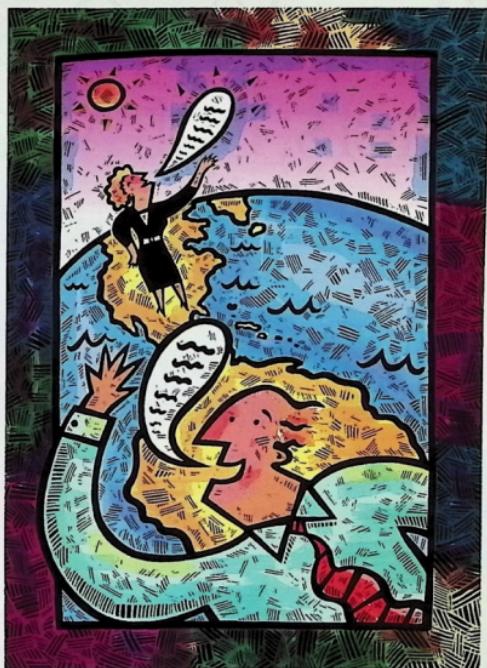


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# All PCBoard SysOps are winners, but we'd like to spotlight a few.

## Boardwatch Magazine September 1993 Readers Choice Awards.



Dan Linton's Software Creations BBS in Clinton, Massachusetts. The system started in December 1989 with one telephone line on a DTK XT, a 2400 pbs modem, and a 209 MB hard drive. By the following October, the system was up to 4 lines, using U.S. Robotics HST Dual Standard modems, a 386 MB hard drive, and a LANTastic network to tie the computers together under

### FIRST PLACE SOFTWARE CREATIONS

The top BBS in the Boardwatch 100 Readers' Choice Contest was

PCBoard BBS software. With Linton's background in hardware design, the system largely served as a technical information center for other local BBS operators.

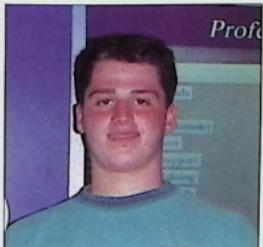
In March 1991, Linton released his first shareware program, titled Picture Puzzle. The popularity of the system increased as it became known as the home system of Picture Puzzle. As more and more BBS operators and callers from around the country called to get the latest version of this software, Creations blossomed. Today, Software Creations runs PCBoard version 15.0, Novell 3.11 local area network, and other top services. Dan has developed a following around the country. Congratulations Dan. For those interested, you can reach Software Creations' BBS at 508-368-7139.

*These are just a few of the many PCBOARD users in the top 100 readers choice poll.*

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is an excellent example of a low-cost feature-rich community bulletin board system serving the resort community

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- **AQUILA BBS for Outstanding BBS Organization, Features, and Design**

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products over the past several years. New modems, drives, networks, ISDN interfaces, satellite feeds and many types of software are only some of the technology the team at Aquila has tested. The Aquila a team is now one of the industry leaders sporting 8 gigs of on-line storage, 42 access lines, ISDN Digital access, and much more. Congratulations Steve Williams and crew.

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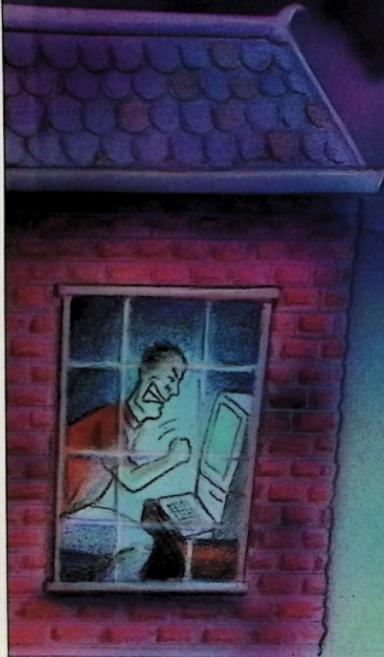
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# THE NII AGENDA

## THE NATIONAL INFORMATION INFRASTRUCTURE: AGENDA FOR ACTION

### EXECUTIVE SUMMARY

All Americans have a stake in the construction of an advanced National Information Infrastructure (NII), a seamless web of communications networks, computers, databases, and consumer electronics that will put vast amounts of information at users' fingertips. Development of the NII can help unleash an information revolution that will change forever the way people live, work, and interact with each other:

- o People could live almost anywhere they wanted, without foregoing opportunities for useful and fulfilling employment, by "telecommuting" to their offices through an electronic highway;

- o The best schools, teachers, and courses would be available to all students, without regard to geography, distance, resources, or disability;

- o Services that improve America's health care system and respond to other important social needs could be available on-line, without waiting in line, when and where you needed them.

Private sector firms are already developing and deploying that infrastructure today. Nevertheless, there remain essential roles for government in this process. Carefully crafted government action will complement and enhance the efforts of the private sector and assure the growth of an information infrastructure available to all Americans at reasonable cost. In developing our policy initiatives in this area, the Administration will work in close partnership with business, labor, academia, the public, Congress, and state and local government. Our efforts will be guided by the following principles and objectives:

- o Promote private sector investment, through appropriate tax and regulatory policies.

- o Extend the "universal service" concept to ensure that information resources are available to all at affordable prices. Because information means empowerment—and employment—the government has a duty to ensure that all Americans have access to the resources and job creation potential of the Information Age.

- o Act as a catalyst to promote technological innovation and new applications. Commit important government research programs and grants to help the private sector develop and demonstrate technologies needed for the NII, and develop the applications and services that will maximize its value to users.

- o Promote seamless, interactive, user-driven operation of the NII. As the NII evolves into a "network of networks," government will ensure that users can transfer information across networks easily and efficiently. To increase the likelihood that the NII will be both interactive and, to a large extent, user driven, government must reform regulations and policies that may inadvertently hamper the development of interactive applications.

- o Ensure information security and network reliability. The NII must be trust-worthy and secure, protecting the privacy of its users. Government action will also ensure that the overall system remains reliable, quickly repairable in the event of a failure and, perhaps most importantly, easy to use.

- o Improve management of the radio frequency spec-

trum, an increasingly critical resource.

- o Protect intellectual property rights. The Administration will investigate how to strengthen domestic copyright laws and international intellectual property treaties to prevent piracy and to protect the integrity of intellectual property.

- o Coordinate with other levels of government and with other nations. Because information crosses state, regional, and national boundaries, coordination is critical to avoid needless obstacles and prevent unfair policies that handicap U.S. industry.

- o Provide access to government information and improve government procurement. The Administration will seek to ensure that Federal agencies, in concert with state and local governments, use the NII to expand the information available to the public, ensuring that the immense reservoir of government information is available to the public easily and equitably. Additionally, Federal procurement policies for telecommunications and information services and equipment will be designed to promote important technical developments for the NII and to provide attractive incentives for the private sector to contribute to NII development.

The time for action is now. Every day brings news of change: new technologies, like hand-held computerized assistants; new ventures and mergers combining businesses that not long ago seemed discrete and insular; new legal decisions that challenge the separation of computer, cable, and telephone companies. These changes promise substantial benefits for the American people, but only if government understands fully their implications and begins working with the private sector and other interested parties to shape the evolution of the communications infrastructure.

The benefits of the NII for the nation are immense. An advanced information infrastructure will enable U.S. firms to compete and win in the global economy, generating good jobs for the American people and economic growth for the nation. As importantly, the NII can transform the lives of the American people — ameliorating the constraints of geography, disability, and economic status — giving all Americans a fair opportunity to go as far as their talents and ambitions will take them.

## THE NATIONAL INFORMATION INFRASTRUCTURE: THE ADMINISTRATION'S AGENDA FOR ACTION Version 1.0

### I. The Promise of the NII

Imagine you had a device that combined a telephone, a TV, a camcorder, and a personal computer. No matter where you went or what time it was, your child could see you and talk to you, you could watch a replay of your team's last game, you could browse the latest additions to the library, or you could find the best prices in town on groceries, furniture, clothes — whatever you needed.

### Imagine further the dramatic changes in your life if:

- o The best schools, teachers, and courses were available to all students, without regard to geography, distance, resources, or disability;

- o The vast resources of art, literature, and science were available everywhere, not just in large institutions or big-city libraries and museums;



o Services that improve America's health care system and respond to other important social needs were available on-line, without waiting in line, when and where you needed them;

o You could live in many places without foregoing opportunities for useful and fulfilling employment, by "telecommuting" to your office through an electronic highway instead of by automobile, bus or train;

o Small manufacturers could get orders from all over the world electronically — with detailed specifications — in a form that the machines could use to produce the necessary items;

o You could see the latest movies, play the hottest video games, or bank and shop from the comfort of your home whenever you chose;

o You could obtain government information directly or through local organizations like libraries, apply for and receive government benefits electronically, and get in touch with government officials easily; and

o Individual government agencies, businesses and other entities all could exchange information electronically — reducing paperwork and improving service.

Information is one of the nation's most critical economic resources, for service industries as well as manufacturing, for economic as well as national security. By one estimate, two-thirds of U.S. workers are in information-related jobs, and the rest are in industries that rely heavily on information. In an era of global markets and global competition, the technologies to create, manipulate, manage and use information are of strategic importance for the United States. Those

technologies will help U.S. businesses remain competitive and create challenging, high-paying jobs. They also will fuel economic growth which, in turn, will generate a steadily-increasing standard of living for all Americans.

That is why the Administration has launched the National Information Infrastructure initiative. We are committed to working with business, labor, academia, public interest groups, Congress, and state and local government to ensure the development of a national information infrastructure (NII) that enables all Americans to access information and communicate with each other using voice, data, image or video at anytime, anywhere. By encouraging private sector investment in the NII's development, and through government programs to improve access to essential services, we will promote U.S. competitiveness, job creation and solutions to pressing social problems.

## II. What Is the NII?

The phrase "information infrastructure" has an expansive meaning. The NII includes more than just the physical facilities used to transmit, store, process, and display voice, data, and images. It encompasses:

o A wide range and ever-expanding range of equipment including cameras, scanners, keyboards, telephones, fax machines, computers, switches, compact disks, video and audio tape, cable, wire, satellites, optical fiber transmission lines, microwave nets, switches, televisions, monitors, printers, and much more.

The NII will integrate and interconnect these physical components in a technologically neutral manner so that no one industry will be favored over any other. Most importantly, the NII requires building foundations for living in the

Information Age and for making these technological advances useful to the public, business, libraries, and other nongovernmental entities. That is why, beyond the physical components of the infrastructure, the value of the National Information Infrastructure to users and the nation will depend in large part on the quality of its other elements:

o The information itself, which may be in the form of video programming, scientific or business databases, images, sound recordings, library archives, and other media. Vast quantities of that information exist today in government agencies and even more valuable information is produced every day in our laboratories, studios, publishing houses, and elsewhere.

o Applications and software that allow users to access, manipulate, organize, and digest the proliferating mass of information that the NII's facilities will put at their fingertips.

o The network standards and transmission codes that facilitate interconnection and interoperability between networks, and ensure the privacy of persons and the security of the information carried, as well as the security and reliability of the networks.

o The people — largely in the private sector — who create the information, develop applications and services, construct the facilities, and train others to tap its potential. Many of these people will be vendors, operators, and service providers working for private industry.

Every component of the information infrastructure must be developed and integrated if America is to capture the promise of the Information Age.

The Administration's NII initiative will promote and support full development of each component. Regulatory and economic policies will be adopted that encourage private firms to create jobs and invest in the applications and physical facilities that comprise the infrastructure. The Federal government will assist industry, labor, academia, and state and local governments in developing the information resources and applications needed to maximize the potential of those underlying facilities. Moreover, and perhaps most importantly, the NII initiative will help educate and train our people so that they are prepared not only to contribute to the further growth of the NII, but also to understand and enjoy fully the services and capabilities that it will make available.

### **III. Need for Government Action To Complement Private Sector Leadership**

The foregoing discussion of the transforming potential of the NII should not obscure a fundamental fact — the private sector is already developing and deploying such an infrastructure today. The United States communications system — the conduit through which most information is accessed or distributed — is second to none in speed, capacity, and reliability. Each year the information resources, both hardware and software, available to most Americans are substantially more extensive and more powerful than the previous year.

The private sector will lead the deployment of the NII. In recent years, U.S. companies have invested more than \$50 billion annually in telecommunications infrastructure — and that figure does not account for the vast investments made by firms in related industries, such as computers. In contrast, the Administration's ambitious agenda for investment in critical NII projects (including computing) amounts to \$1.2 billion annually. Nonetheless, while the private sector role in NII development will predominate, the govern-

ment has an essential role to play. In particular, carefully crafted government action can complement and enhance the benefits of these private sector initiatives. Accordingly, the Administration's NII initiative will be guided by the following nine principles and goals, which are discussed in more detail below:

1) Promote private sector investment, through tax and regulatory policies that encourage innovation and promote long-term investment, as well as wise procurement of services.

2) Extend the "universal service" concept to ensure that information resources are available to all at affordable prices. Because information means empowerment, the government has a duty to ensure that all Americans have access to the resources of the Information Age.

3) Act as catalyst to promote technological innovation and new applications. Commit important government research programs and grants to help the private sector develop and demonstrate technologies needed for the NII.

4) Promote seamless, interactive, user-driven operation of the NII. As the NII evolves into a "network of networks," government will ensure that users can transfer information across networks easily and efficiently.

5) Ensure information security and network reliability. The NII must be trustworthy and secure, protecting the privacy of its users. Government action will also aim to ensure that the overall system remains reliable, quickly repairable in the event of a failure and, perhaps most importantly, easy to use.

6) Improve management of the radio frequency spectrum, an increasingly critical resource.

7) Protect intellectual property rights. The Administration will investigate how to strengthen domestic copyright laws and international intellectual property treaties to prevent piracy and to protect the integrity of intellectual property.

8) Coordinate with other levels of government and with other nations. Because information crosses state, regional, and national boundaries, coordination is important to avoid unnecessary obstacles and to prevent unfair policies that handicap U.S. industry.

9) Provide access to government information and improve government procurement. As described in the National Performance Review, the Administration will seek to ensure that Federal agencies, in concert with state and local governments, use the NII to expand the information available to the public, so that the immense reservoir of government information is available to the public easily and equitably. Additionally, Federal procurement policies for telecommunications and information services and equipment will be designed to promote important technical developments for the NII and to provide attractive incentives for the private sector to contribute to NII development.

The time for action is now. Every day brings news of change: new technologies, like hand-held computerized assistants; new ventures and mergers combining businesses that not long ago seemed discrete and insular; new legal decisions that challenge the separation of computer, cable and telephones. These changes promise substantial benefits for the American people, but only if government understands fully the implications of these changes and to work with the private sector and other interested parties to shape the evolution of the communications infrastructure.

#### IV. Managing Change/ Forging Partnerships

We will help to build a partnership of business, labor, academia, the public, and government that is committed to deployment of an advanced, rapid, powerful infrastructure accessible and accountable to all Americans.

Forging this partnership will require extensive inter-governmental coordination to ensure that Administration, Congressional, state and local government policy regarding the NII is consistent, coherent, and timely. It also requires the development of strong working alliances among industry groups and between government and the businesses responsible for creating and operating the NII. Finally, close cooperation will be needed between government, users, service providers, and public interest groups to ensure that the NII develops in a way that benefits the American people.

##### Specifically, the Administration will:

###### (1) Establish an interagency Information Infrastructure Task Force

The President has convened a Federal inter-agency "Information Infrastructure Task Force" (IITF) that will work with Congress and the private sector to propose the policies and initiatives needed to accelerate deployment of a National Information Infrastructure. Activities of the IITF include coordinating government efforts in NII applications, linking government applications to the private sector, resolving outstanding disputes, and implementing Administration policies. Chaired by Secretary of Commerce Ron Brown and composed of high-level Federal agency representatives, the IITF's three committees focus on telecommunications policy, information policy, and applications.

###### (2) Establish a private sector Advisory Council on the National Information Infrastructure

To facilitate meaningful private sector participation in the IITF's deliberations, the President will sign an Executive Order creating the "United States Advisory Council on the National Information Infrastructure" to advise the IITF on matters relating to the development of the NII. The Council will consist of 25 members, who will be named by the Secretary of Commerce by December 1993. Nominations will be solicited from a variety of NII constituencies and interested parties. The IITF and its committees also will use other mechanisms to solicit public comment to ensure that it hears the views of all interested parties.

###### (3) Strengthen and streamline Federal communications and information policy-making agencies

In order to implement the ambitious agenda outlined in this document, the federal agencies most directly responsible for the evolution of the NII (such as NTIA, the Office of Information and Regulatory Affairs at OMB, and the FCC) must be properly structured and adequately staffed to address many new and difficult policy issues. The Administration intends to ensure that these agencies have the intellectual and material resources they need. In addition, in accord with the Vice President's National Performance Review, these agencies will make the organizational and procedural changes needed to most effectively contribute to the NII initiative.

#### V. Principles and Goals for Government Action

The Task Force currently is undertaking a wide-ranging examination of all issues relevant to the timely development and growth of the National Information Infrastructure. Specific principles and goals in areas where government action is warranted have already been identified and work has begun on the following matters:

##### 1. Promote Private Sector Investment

One of the most effective ways to promote investments in our nation's information infrastructure is to introduce or further expand competition in communications and information markets. Vibrant competition in these markets will spur economic growth, create new businesses and benefit U.S. consumers.

To realize this vision, however, policy changes will be necessary:

**Action: Passage of communications reform legislation.** The Administration will work with Congress to pass legislation by the end of 1994 that will increase competition and ensure universal access in communications markets — particularly those, such as the cable television and local telephone markets, that have been dominated by monopolies. Such legislation will explicitly promote private sector infrastructure investment — both by companies already in the market and those seeking entry.

**Action: Revision of tax policies.** Tax policies are important determinants of the amount of private sector investment in the NII. The President has signed into law tax incentives for private sector investment in R&D and new business formation, including a three-year extension of the R&D credit and a targeted capital gains reduction for investments in small businesses. Both of these tax incentives will help spur the private sector investment needed to develop the NII.

###### 2. Extend the "Universal Service" Concept to Ensure that Information Resources Are Available to All at Affordable Prices

The Communications Act of 1934 articulated in general terms a national goal of "Universal Service" for telephones — widespread availability of a basic communications service at affordable rates. A major objective in developing the NII will be to extend the Universal Service concept to the information needs of the American people in the 21st Century. As a matter of fundamental fairness, this nation cannot accept a division of our people among telecommunications or information "haves" and "have-nots." The Administration is committed to developing a broad, modern concept of Universal Service — one that would emphasize giving all Americans who desire it easy, affordable access to advanced communications and information services, regardless of income, disability, or location.

Devising and attaining a new goal for expanded Universal Service is consistent with efforts to spur infrastructure development by increasing competition in communications and information markets. As noted above, competition can make low cost, high quality services and equipment widely available. Policies promoting greater competition in combination with targeted support for disadvantaged users or especially high cost or rural areas would advance both rapid infrastructure modernization and expanded Universal Service.

**Action: Develop a New Concept of Universal Service.** To gather information on the best characteristics of an expanded concept of Universal Service, the Commerce Department's National Telecommunications and Information Administration (NTIA) will hold a series of public hearings on Universal Service and the NII, beginning by December 1993. The Administration will make a special effort to hear from public interest groups. Building on the knowledge gained from these activities, the IITF will work with the Advisory Council on the National Information Infrastructure, as well as with state regulatory commissions, to determine how the Universal Service concept should be applied in the 21st Century.

### 3. Promote Technological Innovation and New Applications

Government regulatory, antitrust, tax, and intellectual property policies all affect the level and timing of new offerings in services and equipment — including the technology base that generates innovations for the marketplace. But technological innovations ultimately depend upon purposeful investment in research and development, by both the private sector and government. R&D investment helps firms to create better products and services at lower costs.

As noted in the Administration's February 22, 1993 technology policy statement: "We are moving to accelerate the development of technologies critical for long-term growth but not receiving adequate support from private firms, either because the returns are too distant or because the level of funding required is too great for individual firms to bear." Government research support already has helped create basic information technologies in computing, networking and electronics. We will support further NII-related research and technology development through research partnerships and other mechanisms to accelerate technologies where market mechanisms do not adequately reflect the nation's return on investment. In particular, these government research and funding programs will focus on the development of beneficial public applications in the fields of education, health care, manufacturing, and provision of government services.

**Action: Continue the High-Performance Computing and Communications Program.** Established by the High-Performance Computing Act of 1991, the HPCC Program funds R&D designed to create more powerful computers, faster computer networks, and more sophisticated software. In addition, the HPCC Program is providing scientists and engineers with the tools and training they need to solve "Grand Challenges," research problems — like designing new drugs — that cannot be solved without the most powerful computers. The Administration has requested \$1 billion for the HPCC Program in fiscal year 1994, and is in the process of forming a "High-Performance Computing Advisory Committee," to provide private sector input on the Program.

We have also requested an additional \$96 million in the FY 1994 budget to create a new component of the HPCC Program — Information Infrastructure Technologies and Applications (IITA). The Administration is working with Congress to obtain authorization to fund this effort, which

will develop and apply high-performance computing and high-speed networking technologies for use in the fields of health care, education, libraries, manufacturing, and provision of government information.

**Action: Implement the NII Pilot Projects Program.** In its FY 94 budget, the Administration has requested funding from the Congress for NII networking pilot and demonstration projects. Under NTIA's direction, this pilot program will provide matching grants to state and local governments, health care providers, school districts, libraries, universities, and other non-profit entities. The grants will be awarded after a competitive merit review process and will be used to fund projects to connect institutions to existing networks, enhance communications networks that are currently operational, and permit users to interconnect among different networks. Funded projects will demonstrate the potential of the NII and provide tangible benefits to their communities. Equally important, they will help leverage the resources and creativity of the private sector to devise new applications and uses of the NII. The successes of these pilot projects will create an iterative process that will generate more innovative approaches each year.

**Action: Inventory NII Applications Projects.** Many insights can be gained by sharing information about how government can effectively use the NII. By the end of January 1994, the IITF will complete an inventory of current and planned government activities and will widely disseminate the results through electronic and printed means. An electronic forum is being established to encourage government and private sector contributions and comments about government applications projects.

### 4. Promote Seamless, Interactive, User-Driven Operation

Because the NII will be a network of networks, information must be transferable over the disparate networks easily, accurately, and without compromising the content of the messages. Moreover, the NII will be of maximum value to users if it is sufficiently "open" and interactive so that users can develop new services and applications or exchange information among themselves, without waiting for services to be offered by the firms that operate the NII. In this way, users will develop new "electronic communities" and share knowledge and experiences that can improve the way that they learn, work, play, and participate in the American democracy.

To assure interoperability and openness of the many components of an efficient, high-capacity NII, standards for voice, video, data, and multimedia services must be developed. Those standards also must be compatible with the large installed base of communications technologies, and flexible and adaptable enough to meet user needs at affordable costs. The United States has long relied on a consensus-based, voluntary standards-setting process in communications. Particularly in the area of information and communications technology, where product cycles are often measured in months, not years, the standards process is critical and has not always worked to speed technological innovation and serve end-users well. Government can catalyze this industry-driven process by participating more actively in private-sector standards-writing bodies and by working with industry to address strategic technical barriers to interoperability and adoption of new technologies.

To increase the likelihood that the NII will be both interactive and, to a large extent, user-driven, government also must reform regulations and policies that may inadvertently hamper the development of interactive applications. For example, government regulations concerning the lack of reimbursement of health care procedures may deter the growth of distance medicine applications.

**Action: Review and clarify the standards process to speed NII applications.** By October 15, 1993 the Commerce Department's National Institute for Standards and Technology (NIST) will establish a panel and work with other appropriate agencies to review the government's involvement in establishing network requirements and standards with domestic and international partners. The panel, with input from the private sector and other levels of government, will consider the role of the government in the standards process and will identify opportunities for accelerating the deployment of the NII.

**Action: Review and reform government regulations that impede development of interactive services and applications.** The Administration will work closely with the private sector, as well as state and local governments, to identify government policies and regulations that may hinder the growth of interactive services and applications. The IITF will determine how those regulations should be changed.

## 5. Ensure Information Security and Network Reliability

The trustworthiness and security of communications channels and networks are essential to the success of the NII. Users must be assured that information transmitted over the infrastructure will go when and where it is intended to go. Electronic information systems can create new vulnerabilities. For example, electronic files can be broken into and copied from remote locations, and cellular phone conversations can be monitored easily. Yet these same systems, if properly designed, can offer greater security than less advanced communications channels.

Through the use of information systems, gathering, sending, and receiving a wide variety of personal information is now simple, quick, and relatively inexpensive. The use of information technologies to access, modify, revise, repackaging, and resell information can benefit individuals, but unauthorized use can encroach on their privacy. While media reports often emphasize the role of modern information technology in invading privacy, technology advances and enhanced management oversight also offer the opportunity for privacy protection. This protection is especially important to businesses that increasingly transmit sensitive proprietary data through electronic means. In a climate of tough global competitiveness to gain market advantage, the confidentiality of this information can spell the difference between business success or failure.

In addition, it is essential that the Federal government work with the communications industry to reduce the vulnerability of the nation's information infrastructure. The NII must be designed and managed in a way that minimizes the impact of accident or sabotage. The system must also continue to function in the event of attack or catastrophic natural disaster.

**Action: Review privacy concerns of the NII.** The IITF has developed a work plan to investigate what policies are necessary to ensure individual privacy, while recognizing the legitimate societal needs for information, including those of law enforcement. The IITF has also developed a work plan to investigate how the government will ensure that the infrastructure's operations are compatible with the legitimate privacy interests of its users.

**Action: Review of encryption technology.** In April, the President announced a thorough review of Federal policies on encryption technology.

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In addition, Federal agencies are working with industry to develop new technologies that protect the privacy of citizens, while enabling law enforcement agencies to continue to use court-authorized wiretaps to fight terrorism, drug rings, organized crime, and corruption. Federal agencies are working with industry to develop encryption hardware and software that can be used for this application.

**Action: Work with industry to increase network reliability.** The National Communications System brings together 23 Federal agencies with industry to reduce the vulnerability of the nation's telecommunications systems to accident, sabotage, natural disaster, or military attack. And the Federal Communications Commission has an industry and user Network Reliability Council to advise it on ensuring the reliability of the nation's commercial telecommunications networks. These efforts are increasingly important as the threat posed by terrorism and computing hacking grows. The NCS will continue its work and will coordinate with the IITF. In addition, the National Security Telecommunications Advisory Committee, which advises the President in coordination with the NCS, as well as the FCC's Network Reliability Council, will coordinate with and complement the work of the Advisory Council on the National Information Infrastructure.

## 6. Improve Management of the Radio Frequency Spectrum

Many of the dramatic changes expected from the development of the information infrastructure will grow out of advances in wireless technologies. The ability to access the resources of the NII at any time, from anywhere in the country, will be constrained, however, if there is inadequate spectrum available. To ensure that spectrum scarcity does not impede the development of the NII, the Administration places a high priority on streamlining its procedures for the allocation and use of this valuable resource.

**Action: Streamline allocation and use of spectrum.** The Administration is working with Congress to fully implement the spectrum management provisions of the Omnibus Budget and Reconciliation Act of 1993, to streamline government use of spectrum and to get spectrum to the public efficiently. These provisions will provide greater flexibility in spectrum allocation, including increased sharing of spectrum between private sector and government users, increased flexibility in technical and service standards, and increased choices for licensees in employing their assigned spectrum.

**Action: Promote market principles in spectrum distribution.** Further, the Administration will continue to support policies that place a greater reliance on market principles in distributing spectrum, particularly in the assignment process, as a superior way to apportion this scarce resource among the widely differing wireless services that will be a part of the NII. At the same time, the Administration will develop policies to ensure that entrepreneurs and small, rural, minority- and women-owned businesses are able to participate in spectrum auctions.

## 7. Protect Intellectual Property Rights

Development of an advanced information infrastructure will create unprecedented market opportunities and new challenges for our world-pre-eminent media and information industries. The broad public interest in promoting the dissemination of information to our citizens must be balanced with the need to ensure the integrity of intellectual property rights and copyrights in information and entertainment products. This protection is crucial if these products — whether in the form of text, images, computer programs, databases, video or sound recordings, or multimedia formats — are to move in commerce using the full capability of the NII.

**Action: Examine the adequacy of copyright laws.** The IITF will investigate how to strengthen domestic copyright laws and international intellectual property treaties to prevent piracy and to protect the integrity of intellectual property. To ensure broad access to information via the NII, the IITF will study how traditional concepts of fair use should apply with respect to new media and new works.

**Action: Explore ways to identify and reimburse copyright owners.** The IITF will explore the need for standards for the identification of copyright ownership of information products in electronic systems (e.g., electronic headers, labels or signature techniques). The Task Force will also evaluate the need to develop an efficient system for the identification, licensing, and use of work, and for the payment of royalties for copyrighted products delivered or made available over electronic information systems.

## 8. Coordinate with Other Levels of Governmental and With Other Bodies

**Domestic:** Many of the firms that will likely participate in the NII are

now subject to regulation by Federal, state, and local government agencies. If the information infrastructure is to develop quickly and coherently, there must be close coordination among the various government entities, particularly with respect to regulatory policy. It is crucial that all government bodies — particularly Congress, the FCC, the Administration, and state and local governments — work cooperatively to forge regulatory principles that will promote deployment of the NII.

**Action: Seek ways to improve coordination with state and local officials.** The IITF will meet with state and local officials to discuss policy issues related to development of the NII. The Task Force will also seek input from the private sector and non-federal agencies as it devises proposals for regulatory reform. The Administration is committed to working closely with state and local governments in developing its telecommunications policies.

**International:** The NII also will develop in the context of evolving global networks. Because customers typically demand that U.S. communications providers offer services on a global basis, it is critical that the infrastructure within this country can meet international, as well as domestic, requirements.

**Action: Open up overseas markets.** The Administration has shown its willingness to work directly on behalf of U.S. firms to ensure that they have an equal opportunity to export telecommunications-related goods and services to potential overseas customers. For example, the Commerce Department is developing new export control policies governing computers and telecommunications equipment manufactured by U.S. firms. These changes will remove export restrictions on many of these products and permit U.S. manufacturers to enter new markets not previously available to them. The Administration will continue to work to open overseas markets for U.S. services and products.

**Action: Eliminate barriers caused by incompatible standards.** Equally important is the need to avoid trade barriers raised by incompatible U.S. and foreign standards or — more subtly — between the methods used to test conformance to standards. Through its participation in international standards committees, the Administration is working to eliminate or avert such barriers.

**Action: Examine international and U.S. trade regulations.** The IITF will coordinate the Administra-

tion's examination of policy issues related to the delivery of telecommunications services to and from the U.S., including claims by some U.S. companies that regulatory practices in foreign countries — including denial of market access for U.S. carriers and the imposition of excessive charges for completing calls from the United States — are harming the competitiveness of the industry and the costs charged to U.S. customers for service. The IITF also will reexamine U.S. regulation of international telecommunications services.

#### 9. Provide Access to Government Information and Improve Government Procurement

Thomas Jefferson said that information is the currency of democracy. Federal agencies are among the most prolific collectors and generators of information that is useful and valuable to citizens and business. Improvement of the nation's information infrastructure provides a tremendous opportunity to improve the delivery of government information to the taxpayers who paid for its collection; to provide it equitably, at a fair price, as efficiently as possible.

The Federal government is improving every step of the process of information collection, manipulation, and dissemination. The Administration is funding research programs that will improve the software used for browsing, searching, describing, organizing, and managing information. But it is committed as well to applying those tools to the distribution of information that can be useful to the public in their various roles as teachers, researchers, businesspeople, consumers, etc.

The key questions that must be addressed are: What information does the public want? What information is in electronic form? By what means can it be distributed? How can all Americans have access to it? A secondary question is: How can government itself improve through better information management?

**Action: Improve the accessibility of government information.** IITF working groups will carefully consider the problems associated with making government information broadly accessible to the public electronically. Additionally, several inter-agency efforts have been started to ensure that the right information is stored and available. Finally, to help the public find government information, an inter-agency project has been formed to develop a virtual card catalogue that will indicate the availability of government information in whatever form it takes.

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**Action: Upgrade the infrastructure for the delivery of government information.** The Federal government has already taken a number of steps to promote wider distribution of its public reports. Legislation has been enacted to improve electronic dissemination of government documents by the Government Printing Office. A number of Federal agencies have moved aggressively to convert their public information into electronic form and disseminate it over the Internet, where it will be available to many more people than have previously had access to such information. In the future, substantial improvements will be made to "FedWorld," an electronic bulletin board established by the Department of Commerce's National Technical Information Service (NTIS), which links the public with more than 100 Federal bulletin boards and information centers. These improvements will enhance FedWorld's ability to distribute to the public scientific, technical, and business-related information generated by the U.S. Government and other sources. Finally, a conference will be held in the Fall of 1993 to begin teaching Federal employees how they can use these distribution mechanisms.

**Action: Enhance citizen access to government information.** In June 1993, OMB prescribed new policies pertaining to the acquisition, use, and distribution of government information by Federal agencies. Among other things, the policies mandate that, in distributing information to the public, Federal agencies should recoup only those costs associated with the dissemination of that information, not with its creation or collection. Moreover, a number of inter-agency efforts are under way to afford greater public access to government information. One project seeks to turn thousands of local and field offices of various Federal agencies into Interactive Citizen Participation Centers, at which citizens can communicate with the public affairs departments of all Federal agencies.

**Action: Strengthen inter-agency coordination through the use of electronic mail.** To implement the National Performance Review's recommendation on expanded use of electronic mail within the Federal government, an inter-agency coordinating body has been established to incorporate electronic mail into the daily work environment of Federal workers. The group is also sponsoring three pilot projects to expand connectivity that will build a body of experience that other Federal agencies can draw on when they begin to use electronic mail.

**Action: Reform the Federal procurement process to make government a leading-edge technology adopter.** The Federal government is the largest single buyer of high technology products. The government has played a key role in developing emerging markets for advanced technologies of military significance; it can be similarly effective for civilian technologies. The Administration will implement the procurement policy reforms set forth in the National Performance Review report.

#### **VI. America's Destiny is Linked to our Information Infrastructure**

The principles and goals outlined in this document provide a blueprint for government action on the NII. Applying them will ensure that government provides constructive assistance to U.S. industry, labor, academia and private citizens as they develop, deploy and use the infrastructure.

The potential benefits for the nation are immense. The NII will enable U.S. firms to compete and win in the global economy, generating good jobs for the American people and economic growth for the nation. As importantly, the NII promises to transform the lives of the American people. It can ameliorate the constraints of geography and economic status, and give all Americans a fair opportunity to go as far as their talents and ambitions will take them.

#### **BENEFITS AND APPLICATIONS OF THE NATIONAL INFORMATION INFRASTRUCTURE**

The development of the National Information Infrastructure is not an end in itself; it is a means by which the United States can achieve a broad range of economic and social goals. Although the NII is not a "silver bullet" for all of the problems we face, it can make an important contribution to our most pressing economic and social challenges.

This infrastructure can be used by all Americans, not just by scientists and engineers. As entrepreneurs, factory workers, doctors, teachers, federal employees, and citizens, Americans can harness this technology to:

- o Create jobs, spur growth, and foster U.S. technological leadership;
- o Reduce health care costs while increasing the quality of service in underserved areas;
- o Deliver higher-quality, lower-cost government services;
- o Prepare our children for the fast-

paced workplace of the 21st century;

o Build a more open and participatory democracy at all levels of government.

This is not a far-fetched prediction. As shown below, our current information infrastructure is already making a difference in the lives of ordinary Americans, and we have just begun to tap its potential.

#### **ECONOMIC BENEFITS**

The National Information Infrastructure will help create high-wage jobs, stimulate economic growth, enable new products and services, and strengthen America's technological leadership. Whole new industries will be created, and the infrastructure will be used in ways we can only begin to imagine. Below are some of the potential benefits to the U.S. economy:

##### **1. Increased economic growth and productivity**

o The Computer Systems Policy Project estimates that the NII will "create as much as \$300 billion annually in new sales across a range of industries."

o The Economic Strategy Institute concluded that accelerated deployment of the NII would increase GDP by \$194 - \$321 billion to GNP by the year 2007, and increase productivity by 20 to 40 percent.

##### **2. Job creation**

Although there are no definitive estimates for the total number of U.S. jobs the deployment of the NII will create, it is clear that it has the potential to create hundreds of thousands of jobs. For example:

o Industry experts believe that the Personal Communications Services industry, a new family of wireless services, could create as many as 300,000 jobs in the next 10-15 years. The development of this industry will be accelerated by the Emerging Telecommunications Technology Act, which was signed by President Clinton as part of the budget package.

##### **3. Technological leadership**

The NII will serve as the driver for a wide variety of technologies, such as semiconductors, high-speed networking, advanced displays, software, and human/computer interfaces such as speech recognition.

This technology will be used to create exciting new products and ser-

vices, strengthening U.S. leadership in the electronics and information technology sector. For example, experts envision the production of powerful computers that will be held in the palm of our hand, "as mobile as a watch and as personal as a wallet, ... [they] will recognize speech, navigate streets, take notes, keep schedules, collect mail, manage money, open the door and start the car, among other computer functions we cannot imagine today."

#### 4. Regional, state, and local economic development

In today's knowledge-based, global economy in which capital and technology are increasingly mobile, the quality of America's information infrastructure will help determine whether companies invest here or overseas. States and regions increasingly recognize that development of their information infrastructure is key to creating jobs and attracting new businesses:

o In May 1993, Governor Jim Hunt announced the creation of the North Carolina Information Highway, a network of fiber optics and advanced switches capable of transmitting the entire 33-volume Encyclopedia Britannica in 4.7 seconds. This network, which will be deployed in cooperation with BellSouth, GTE, and Carolina Telephone, is a key element of North Carolina's economic development strategy.

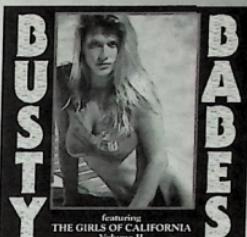
o In California's Silicon Valley, academics, business executives, government officials, and private citizens are working together to build an "advanced information infrastructure and the collective ability to use it." A non-profit organization, Smart Valley Inc., will help develop the information infrastructure and its applications. Many business applications are envisioned, including desktop videoconferencing, rapid delivery of parts designs to fabrication shops, design of chips on remote supercomputers, electronic commerce, and telecommuting.

o The Council of Great Lakes Governors has developed a regional telecommunications initiative, which includes creating an open data network as a first step towards creation of a Great Lakes Information Highway, promoting access in rural areas, developing a set of telecommunications service goals and a time table for achieving them, and developing a computerized inventory of each state's advanced telecommunications infrastructure.

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## 5. Electronic commerce

Electronic commerce (e.g., on-line parts catalogues, multi-media mail, electronic payment, brokering services, collaborative engineering) can dramatically reduce the time required to design, manufacture, and market new products. "Time to market" is a critical success factor in today's global marketplace. Electronic commerce will also strengthen the relationships between manufacturers, suppliers, and joint developers. In today's marketplace, it is not unusual to have 12 or more companies collaborating to develop and manufacture new products.

### HEALTH CARE

The NII can help solve America's health care crisis. The Clinton Administration is committed to health care reform that will ensure that Americans will never again lose their health care coverage and that controls skyrocketing health care costs. The costs of doing nothing are prohibitive:

o Since 1980, our nation's health care costs have quadrupled. Between 1980 and 1992, health expenditures shot up from 9 percent to 14 percent of GDP; under current policies, they will hit 19 percent by the year 2000. Health care cost increases will eat up more than half of the new federal revenue expected over the next four years.

o Twenty-five cents out of every dollar on a hospital bill goes to administrative costs and does not buy any patient care. The number of health care administrators is increasing four times faster than the number of doctors.

These problems will not be solved without comprehensive health care reform. Better use of information technology and the development of health care applications for the NII, however, can make an important contribution to reform. Experts estimate that telecommunications applications could reduce health care costs by \$36 to \$100 billion each year while improving quality and increasing access. Below are some of the existing and potential applications:

**1. Telemedicine:** By using telemedicine, doctors and other care givers can consult with specialists thousands of miles away; continually upgrade their education and skills; and share medical records and x-rays.

Example: In Texas, over 70 hospitals, primarily in rural areas, have been forced to close since 1984. The Texas Telemedicine Project in Austin, Texas offers interactive video consultation to primary care physicians in

rural hospitals as a way of alleviating the shortage of specialists in rural areas. This trial is increasing the quality of care in rural areas and providing at least 14 percent savings by cutting patient transfer costs and provider travel.

### 2. Unified Electronic Claims:

More than 4 billion health care claims are submitted annually from health care providers to reimbursement organizations such as insurance companies, Medicare, Medicaid, and HMOs. Moreover, there are 1500 different insurance companies in the United States using many different claims forms. The administrative costs of the U.S. health care system could be dramatically reduced by moving towards standardized electronic submission and processing of claims.

### 3. Personal Health Information Systems:

The United States can use computers and networks to promote self care and prevention by making health care information available 24 hours a day in a form that aids decision making. Most people do not have the tools necessary to become an active and informed participant in their own health care. As a result, far too many people (estimates range from 50 to 80 percent) entering the health care system do not really need a physician's care. Many improperly use the system by, for example, using the emergency room for a cold or back strain. Many of those who end up with serious health problems enter the health care system too late, and thus require more extensive and costly therapy. Michael McDonald, chairman of the Communications and Computer Applications in Public Health (CCAPH), estimates that even if personal health information systems were used only 25 to 35 percent of the time, \$40 to \$60 billion could be saved.

Example: InterPractice Systems, a joint venture of Harvard Community Health Plan in Boston and Electronic Data Systems, has placed terminals in the homes of heavy users of health care, such as the elderly, pregnant women, and families with young children. Based on a patient's symptoms and their medical history, an electronic advice system makes recommendations to HCHP's members about using self care, talking with a doctor, or scheduling an appointment. In one instance, "an 11-year old who regularly played with the terminal heard his father complain one day of chest pains and turned to the system for help; it diagnosed the symptoms as a probable heart attack. The diagnosis was correct."

### 4. Computer-Based Patient Records:

The Institute of Medicine has concluded that Computer-Based Patient Records are critical to improving the quality and reducing the cost of health care. Currently:

o 11 percent of laboratory tests must be re-ordered because of lost results;

o 30 percent of the time, the treatment ordered is not documented at all;

o 40 percent of the time a diagnosis isn't recorded; and

o 30 percent of the time a medical record is completely unavailable during patient visits.

### CIVIC NETWORKING TECHNOLOGY IN THE PUBLIC INTEREST

The benefits of the NII extend far beyond economic growth. As the Center for Civic Networking observed,

"A country that works smarter; enjoys efficient, less costly government, guided by a well-informed citizenry; that produces high quality jobs and educated citizens to fill them; that paves a road away from poverty; that promotes life-long learning, public life and the cultural life of our communities. This is the promise of the National Information Infrastructure."

The NII could be used to create an "electronic commons" and promote the public interest in the following ways:

**1. Community Access Networks:** Grass-roots networks are springing up all over the country, providing citizens with a wide range of information services. The National Information Infrastructure should expand a citizen's capacity for action in local institutions, as it must honor regional differences and the cultural diversity of America's heritage.

Example: The Heartland FreeNet in Peoria, Illinois provides a wide range of community information to the citizens of Central Illinois 24 hours a day. Topics covered include 113 areas of social services; a year long community calendar; the American Red Cross; current listings from the Illinois Job Service; resources for local businesses; and local government information. Experts in all fields from law to the Red Cross to chemical dependency volunteer their time and expertise to answer questions anonymously asked by the public.

Example: The Big Sky Telegraph began operation in 1988 as an electronic bulletin board system linking Montana's 114 one-room schools to

each other and to Western Montana College. Today, the Big Sky Telegraph enables the formation of "virtual communities" — linking schools, libraries, county extension services, women's centers, and hospitals. Montana's high-school students learning Russian can now communicate with Russian students, and science students are participating in a course on "chaos theory" offered by MIT.

**2. Dissemination of government information:** The free flow of information between the government and the public is essential to a democratic society. Improvements in the National Information Infrastructure provide a tremendous opportunity to improve the delivery of government information to the taxpayers who paid for its collection; to provide it equitably, at a fair price, as equitably as possible.

Example: Some of the most powerful examples of the power inherent in information collection and dissemination come from the experience of Federal agencies. For example, the Emergency Planning and Community Right-to-Know Act of 1986 established a Toxic Release Inventory (TRI), which required industries to report their estimated total releases of toxic chemicals to the environment. The Environmental Protection Agency has used a variety of means for making the data available to the public, including a collaborative effort involving the agency, the nonprofit community, and philanthropy. This effort involved making the TRI available through an online service called RTK NET (the Right-to-Know Computer Network), operated by OMB Watch and Unison Institute.

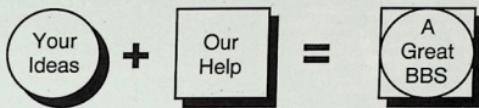
As a result of the TRI program, EPA and industry developed the "33/50" program, in which CEOs set a goal of reducing their pollution by 33 percent by 1992 and 50 percent by 1995. Because of RTK NET's success, EPA is seeking to expand the information available on the service.

**3. Universal access:** The NII must be used to bring Americans together, as opposed to allowing a further polarization between information "haves" and "have nots."

Example: As part of a recent cable franchise negotiation, fiber optic cable was deployed in Harlem, where 40 percent of the residents live below the poverty line. New York City is exploring the use of interactive video conferencing between community rooms in housing projects and government offices, schools, and New York corporations. These facilities could be used to teach parenting to teenage mothers, and promote mentoring pro-

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## RESEARCH

One of the central objectives of the High Performance Computing and Communications Initiative (HPCCI) is to increase the productivity of the research community and enable scientists and engineers to tackle "Grand Challenges," such as forecasting the weather, building more energy-efficient cars, designing life-saving drugs, and understanding how galaxies are formed.

As a result of advances in computing and networking technologies promoted by the HPCCI, America's scientists and engineers (and their colleagues and peers around the world) are able to solve fundamental problems that would have been impossible to solve in the past. U.S. researchers will continue to benefit from the HPCCI and the emerging National Information Infrastructure. Below are just a few of the ways in which this technology is being used by U.S. researchers:

**1. Solving Grand Challenges:** As a result of investments in high performance computers, software, and high-speed networks, researchers have access to more and more computational resources. As a result, scientists and engineers have been able to more accurately model the Earth's climate; design and simulate next-generation aircraft (the High Speed Civil Transport); improve detection of breast cancer by turning two-dimensional MRI images into three-dimensional views; and enhance the recovery of oil and gas from America's existing reservoirs.

**2. Enabling remote access to scientific instruments:** Because of advancements in networks and visualization software, scientists can control and share remote electron microscopes, radio telescopes, and other scientific instruments.

**3. Supporting scientific collaboration:** The Internet has allowed scientists in the United States and around the world to access databases, share documents, and communicate with colleagues. For example, one computer language was developed by 60 people in industry, government and academia over a period of 3 years with only two days of face-to-face meetings. Instead, project participants sent 3,000 e-mail messages to each other, dramatically reducing the time required to develop the language. As scientific research becomes increasingly complex and interdisciplinary, scientists see the need to develop "collaboratories," centers without walls in which "the

nations' researchers can perform their research without regard to geographic location — interacting with colleagues, access instrumentation, sharing data and computational resources, [and] accessing information in digital libraries."

## LIFE-LONG LEARNING

Increasingly, what we earn depends on what we learn. Americans must be well-educated and well-trained if we are compete internationally and enjoy a healthy democracy. The magnitude of the challenge we face is well-known:

o 25 percent of students nationwide no longer complete high-school, a figure which rises to 57 percent in some large cities.

o Currently, 90 million adults in the United States do not have the literacy skills they need to function in our increasingly complex society.

The Clinton Administration has set ambitious national goals for lifelong learning. The "Goals 2000: Educate America Act" would make six education goals part of national policy: 90 percent high school graduation rate; U.S. dominance in math and science; total adult literacy; safe and drug-free schools; increased competency in challenging subjects; and having every child enter school "ready to learn." Secretary of Labor Robert Reich also has emphasized the need to move towards "new work." New work requires problem-solving as opposed to rote repetition, upgrading worker skills, and empowering front-line workers to continuously improve products and services. All of the Administration's policy initiatives (national skill standards, school-to-work transition, training for displaced workers) are aimed at promoting the transition towards high-wage, higher-value "new work."

Although technology alone can not fix what is wrong with America's education and training system, the NII can help. Studies have shown that computer-based instruction is cost-effective, enabling 30 percent more learning in 40% less time at 30% less cost. Fortune recently reported that:

"From Harlem to Honolulu, electronic networks are sparking the kind of excitement not seen in America's classrooms since the space race ... In scores of programs and pilot projects, networks are changing the way teachers teach and students learn."

The United States has just begun to exploit the educational applications of computers and networks. Students

and teachers can use the NII to promote collaborative learning between students, teachers, and experts; access on-line "digital libraries"; and take "virtual" field trips to museums and science exhibits without leaving the classroom.

Example: Headquartered in Cambridge, Massachusetts and funded by the National Science Foundation, the Global Laboratory Project links students from over 101 schools in 27 states and 17 foreign countries, including Japan, Saudi Arabia, Russia and Argentina. All over the world, students establish environmental monitoring stations to study climate change, monitor pollutants such as pesticides and heavy metals, and measure ultraviolet radiation. Students share their data over the Global Lab telecommunications network with each other and with scientists to make comparisons, conduct analyses, and gain a global perspective on environmental problems.

Example: In Texas, the Texas Education Network (TENET) now serves over 25,000 educators, and is making the resources of the Internet available to classrooms. One Texas educator from a small school district described the impact it was having on the learning experiences of children:

"The smaller districts can now access NASA, leave messages for the astronauts, browse around in libraries larger than ever they will ever be able to visit, discuss the Superconducting Supercollider project with the physicist in charge, discuss world ecology with students in countries around the world, read world and national news that appears in newspapers that are not available in their small towns, work on projects as equals and collaborators with those in urban areas, and change the way they feel about the size of their world. This will create students that we could not create otherwise. This is a new education and instruction."

As computers become more powerful and less expensive, students may eventually carry hand-held, computer-based "intelligent tutors" or learn in elaborate simulated environments. One expert predicted the following educational use of virtual reality:

"Imagine a biology student entering an immersive virtual laboratory environment that includes simulated molecules. The learner can pick up two molecules and attempt to fit them together, exploring docking sites. In addition to the three-dimensional images in the head-mounted display, the gesture gloves on his hands press back to provide feedback to his sense of

touch. Alternatively, the student can expand a molecule to the size of a large building and fly around in it, examining the internal structure."

#### CREATING A GOVERNMENT THAT WORKS BETTER & COST LESS

The Vice President Gore's National Performance Review (NPR) provides a bold vision of a federal government which is effective, efficient and responsive. Moving from red tape to results will require sweeping changes: emphasizing accountability for achieving results as opposed to following rules; putting customers first; empowering employees; and reengineering how government agencies do their work. As part of this vision, the NPR emphasizes the importance of information technology as a tool for reinventing government:

"With computers and telecommunications, we need not do things as we have in the past. We can design a customer-driven electronic government that operates in ways that, 10 years ago, the most visionary planner could not have imagined."

The NPR has identified a number of ways in which "electronic government" can improve the quality of government services while cutting costs, some of which are described below:

**1. Develop a nationwide system to deliver government benefits electronically:** The government can cut costs through "electronic benefits transfer" for programs such as federal retirement, social security, unemployment insurance, AFDC, and food stamps. For example, 3 billion Food Stamps are printed and distributed to over 10 million households. Estimates suggest that \$1 billion could be saved over five years once electronic benefits for food stamps is fully implemented.

**2. Develop integrated electronic access to government information and services:** Currently, citizen access to federal government information is uncoordinated and not customer-friendly. Electronic kiosks and computer bulletin boards can result in quick response, complete information, and an end to telephone tag.

Example: Info/California is a network of kiosks in places like libraries and shopping malls. Californians can use these touch-screen computers to renew vehicle registration, register for employment openings, register for information on 90 different subjects, such as applying for student loans or resolving tenant-landlord disputes. These kiosks have reduced the cost of job-match services from \$150 to \$40 per person.

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**3. Establish a National Law Enforcement/Public Safety Network:** Whether responding to natural or technological disasters, or performing search and rescue or interdiction activities, federal, state, and local law enforcement and public safety workers must be able to communicate with each other effectively, efficiently, and securely. Currently, federal, state and local law enforcement agencies have radio systems which can not communicate with each other because they occupy different parts of the spectrum.

**4. Demonstrate and Provide Governmentwide Electronic Mail:** Government-wide e-mail can provide rapid communications among individuals and groups, break down barriers to information flows between and within agencies, allow better management of

complex interagency projects, and permit more communication between government officials and the public.

#### THE INFORMATION INFRASTRUCTURE TASK FORCE

##### Mission:

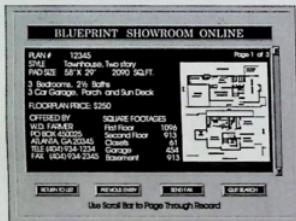
While the private sector will build and run virtually all of the National Information Infrastructure (NII), the President and the Vice President have stated clearly that the Federal government has a key leadership role to play in its development. Accordingly, the White House formed the Information Infrastructure Task Force (IITF) to articulate and implement the Administration's vision for the NII. The task force consists of high-level representatives of the Federal agencies that play

a major role in the development and application of information technologies. Working together with the private sector, the participating agencies will develop comprehensive telecommunications and information policies that best meet the needs of both the agencies and the country. By helping build consensus on thorny policy issues, the IITF will enable agencies to make and implement policy more quickly and effectively.

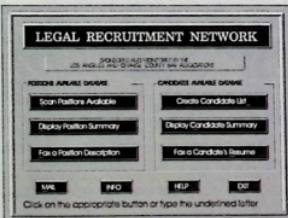
A high-level Advisory Council on the National Information Infrastructure has been established by Executive Order to provide advice to the IITF. It will consist of representatives of the many different stakeholders in the NII, including industry, labor, academia, public interest groups, and state and local govern-

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ments. The Secretary of Commerce will appoint the 25 members of the advisory committee.

The IITF is working closely with the High Performance Computing, Communications, and Information Technology (HPCCIT) Subcommittee of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET), which is chaired by the White House Office of Science and Technology Policy. The HPCCIT Subcommittee provides technical advice to the IITF and coordinates Federal research activities that support development of the National Information Infrastructure.

## Membership

All the key agencies involved in telecommunications and information policy are represented on the task force. The task force operates under the aegis of the White House Office of Science and Technology Policy and the National Economic Council. Ron Brown, the Secretary of Commerce, chairs the IITF, and much of the staff work for the task force will be done by the National Telecommunications and Information Administration (NTIA) of the Department of Commerce.

## Structure:

To date, three committees of the IITF have been established:

(1) Telecommunications Policy Committee, which will formulate a consistent Administration position on key telecommunications issues, is chaired by Larry Irving, head of the National Telecommunications and Information Administration of the Department of Commerce. Recently, the Committee created:

The Working Group on Universal Service, which will work to ensure that all Americans have access to and can enjoy the benefits of the National Information Infrastructure.

(2) Information Policy Committee, which is addressing critical information policy issues that must be addressed if the National Information Infrastructure is to be fully deployed and utilized. Sally Katzen, head of the Office of Information and Regulatory Affairs at the Office of Management and Budget (OMB), chairs the Committee. The Committee has created three working groups:

The Working Group on Intellectual Property Rights, to develop proposals for protecting copyrights and other IPR in an electronic world. Bruce Lehman, head of the Patent and Trademark Office of the Department

of Commerce, chairs this group.

The Working Group on Privacy, to design Administration policies to protect individual privacy despite the rapid increase in the collection, storage, and dissemination of personal data in electronic form. It is chaired by Pat Faley, Acting Director of the Office of Consumer Affairs, Department of Health and Human Services.

The Working Group on Government Information focuses on ways to promote dissemination of government data in electronic form. Bruce McConnell, OMB's Office of Information and Regulatory Affairs, chairs this group.

(3) Applications Committee, which coordinates Administration efforts to develop, demonstrate, and promote applications of information technology in manufacturing, education, health care, government services, libraries, and other areas. This group works closely with the High-Performance Computing and Communications Program, which is funding development of new applications technologies, to determine how Administration policies can best promote the deployment of such technologies. Arati Prabhakar, Director of the National Institute of Standards and Technology, chairs the committee. This committee is responsible for implementing many of the recommendations of the Vice President's National Performance Review that pertain to information technology. So far, the Committee has created one working group:

The Working Group on Government Information Technology Services (GITS) will coordinate efforts to improve the application of information technology by Federal agencies.

## ADVISORY COUNCIL ON THE NATIONAL INFORMATION INFRASTRUCTURE

The President will sign an Executive Order creating the "United States Advisory Council on the National Information Infrastructure" to facilitate private sector input to the Information Infrastructure Task Force. The IITF, which is chaired by the Secretary of Commerce, will work with Congress and the private sector to propose the policies and initiatives needed to accelerate deployment of the NII.

The Council will consist of not more than 25 senior-level individuals to be named by the Secretary of Commerce this year. A chair and/or vice chair will be appointed by the Secretary from among the Council members.

Nominations will be solicited from a variety of NII constituencies and interest groups. The IITF and its committees also will use other mechanisms to solicit public input to ensure that it hears the views of all interested parties.

The Council will be broadly representative of the key constituencies impacted by the NII, including business, labor, academia, public interest groups, and state and local governments.

The Council shall advise the IITF on matters related to the development of the NII, such as: the appropriate roles of the private and public sectors in NII development; a vision for the evolution of the NII and its public and commercial applications; the impact of current and proposed regulatory regimes on the evolution of the NII; privacy, security, and copyright issues; national strategies for maximizing interconnection and interoperability of communications networks; and universal access.

The Council is expected to invite experts to submit information to the Council and form subcommittees of the Council to review specific issues.

The Department of Commerce will act as "secretariat" for the Council, providing administrative services, facilities, staff and other support services.

The Council will exist for two years unless its charter is extended.

The Council will be separate from, and complementary to, the High Performance Computing Advisory Committee, which will be established to provide private sector input on the High Performance Computing and Communications Initiative.

## ADMINISTRATION NII ACCOMPLISHMENTS

During its first seven months, the Clinton-Gore Administration has taken major steps to make its vision of the National Information Infrastructure a reality:

### 1. Freeing up spectrum to create information "skyways":

The President recently signed the Emerging Telecommunications Technology Act, which directs the Secretary of Commerce to transfer, over a ten-year period, at least 200 MHz of spectrum now used by federal agencies to the FCC for subsequent licensing to the private sector. It allows the FCC to use competitive bidding to grant new license assignments for spectrum.

o This will create high-tech jobs and accelerate the development of new wireless industries such as Personal Communications Services. The entire cellular industry, which has created 100,000 jobs, was created by licensing only 50 MHz of spectrum.

## 2. Reinventing Government:

o The Administration is committed to using "electronic government" to ensure that the federal government works better and costs less.

o As part of the National Performance Review, the Vice President has identified a number of concrete ways to use information technology to cut costs and improve services, such as electronic benefits transfer; access to government information and services through electronic "kiosks"; a national law enforcement/public safety network; and electronic procurement.

## 3. Investing in technology:

The President's FY 1994 budget includes:

o \$1.1 billion for the High-Performance Computing and Communications Initiative, including a new \$100 million program to develop applications in areas such as education, manufacturing, health, and digital libraries. The House has passed legislation which would authorize these new programs; Senate action is expected in the fall of 1993.

o \$50 million for NTIA grants to demonstrate the applications of the NII for non-profit institutions such as schools, hospitals, and libraries.

o \$40 million for research by the Department of Energy's National Labs on the information infrastructure.

The ARPA-led Technology Reinvention Project (TRP), funded at \$472 million in FY 1993, has generated almost 3,000 proposals from the private sector, requesting a total of \$8.5 billion. Many of these proposals are for technology development for the National Information Infrastructure and its applications in health care, manufacturing, electronic commerce, and education and training. The President recently endorsed increasing the funding of the TRP to \$600 million for FY 1994.

## 4. Making government information more available to citizens:

o The Office of Management and Budget issued a new policy in June (OMB Circular A-130) to encourage agencies to increase citizen access to public information.

o Also in June, the President and Vice President announced that the White House would be accessible to

the public via electronic mail. The Administration is using on-line information services and the Internet to make available speeches, press briefings, executive orders, and a summary of the budget.

## 5. Creating the right environment for private sector investment in the National Information Infrastructure:

o The President has signed into law tax incentives for private sector investment in R&D and new business formation, including a three-year extension of the R&D credit and a targeted capital gains reduction for investments in small businesses. Both of these tax incentives will help spur the private sector investment needed to develop the National Information Infrastructure.

### ADMINISTRATION NII INFORMATION SOURCES

To submit comments on "The National Information Infrastructure: Agenda for Action" or to request additional copies of this package:

Write: NTIA NII Office 15th Street and Constitution Avenue Washington, D.C. 20230 Call: 202-482-1840 Fax: 202-482-1635 Internet: [nii@ntia.doc.gov](mailto:nii@ntia.doc.gov)

To obtain copies of this package electronically see instructions that follow.

Key Administration Contacts:  
Ronald H. Brown, Secretary of Commerce Chair, Information Infrastructure Task Force 15th Street and Constitution Avenue, NW Washington, D.C. 20230 phone: 202-482-3934 fax: 202-482-4576 internet: [nii@ntia.doc.gov](mailto:nii@ntia.doc.gov)

Larry Irving, Assistant Secretary for Communications and Information, Director, National Telecommunications and Information Administration, Chair, IITF Telecommunications Policy Committee 15th Street and Constitution Avenue, NW Washington, D.C. 20230 phone: 202-482-1840 fax: 202-482-1635 internet: <http://ntia.doc.gov>

Arati Prabhakar, Director, National Institute of Standards and Technology, Chair, IITF Applications Committee NIST, Administration Building, Room A1134, Gaithersburg, MD, 20899 phone: 301-975-2300 fax: 301-869-8972 internet: [arati@nist.gov](mailto:arati@nist.gov)

Sally Katzen, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget, Chair, IITF Information Policy Committee New Executive Office Building, Room 350 Washington, D.C. 20503 phone: 202-395-4852 fax: 202-395-3047

Mike Nelson, Special Assistant, Infor-

mation Technology, Office of Science and Technology Old Executive Office Building, Room 423 Washington, D.C. 20500 phone: 202-395-6175 fax: 202-395-4155 internet: [mnelson@ostp.eop.gov](mailto:mnelson@ostp.eop.gov)

Tom Kalil, Director of Science and Technology National Economic Council Old Executive Office Building, Room 233 Washington, D.C. 20500 phone: 202-456-2801 fax: 202-456-2223 internet: [kalil@arpa.mil](mailto:kalil@arpa.mil)

Donald Lindberg, Director, HPCC National Coordinating Office National Library of Medicine 8600 Rockville Pike Bethesda, MD, 20894 phone: 301-402-4100 fax: 301-402-4080 internet: [lindberg@hpcc.gov](mailto:lindberg@hpcc.gov)

Press contact: Carol Hamilton, Deputy Director, Office of Public Affairs, Department of Commerce phone: 202-482-6001 fax: 202-482-6027 internet: [CHamilton@doc.gov](mailto:CHamilton@doc.gov)

The package is available in ASCII format from a variety of electronic sources including the following:

1. Internet The package is available in ASCII format through both FTP and Gopher. The name of the file is "niagenda.asc". Access information and directories are described below.

FTP: Address: <ftp://ntia.doc.gov> Login as "anonymous". Use your email address or guest as the password. Change directory to "pub".

Address: [enh.nist.gov](http://enh.nist.gov) Login as "anonymous" using "guest" as the password.

Address: [isdres.er.usgs.gov](http://isdres.er.usgs.gov) Login as "anonymous". Use your email address or "guest" as the password. Change directory to npr.

The package also may be present in a self extracting compressed file named "niagend.exe". Remember to issue the binary command before "getting" the compressed file.

Gopher (server/client): Telnet to: <gopher://gopher.nist.gov> login as "gopher". Choose the menu item "DOC Documents". Choose "niagenda.asc".

Gopher to: [ace.esusda.gov](http://ace.esusda.gov), port 70 Select: 6. Americans Communicating Electronically 3. National Technology Information 1. National Information Infrastructure Agenda

Email Send a message to [ace-request@ace.esusda.gov](mailto:ace-request@ace.esusda.gov) in the body of the message put: send niagenda

2. Bulletin Boards The package is available for downloading on the following bulletin boards:

Name: NTIA Bulletin Board  
 Phone: (202) 482-1199 Communications parameters should be set to either 2400 or 9600 baud, no parity, 8 data bits and 1 stop bit. The package is available under the "press releases" menu item as "niagend.asc" (ascii) and "niagend.exe" (compressed-self extracting).

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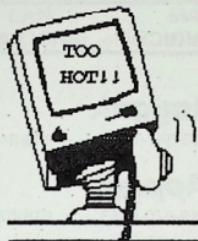
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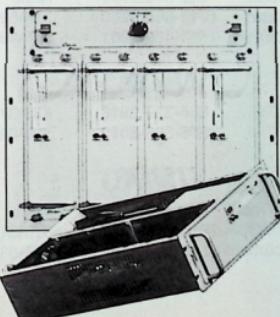
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DLG Professional	Telepro Technologies	403-341-7826	403-341-7826	403-347-3262	AMIGA
<b>Apple</b>					
ProLine	Morgan Davis group	619-670-0563	619-670-9643	619-670-5379	APPLE II
<b>MS-DOS</b>					
DLX	Baudtown	818-894-4150	None	818-893-7600	DOS
MEGAHOST	ASCII Computer Entrps	None	None	209-836-2402	DOS
OPUS-CBCS	NONE	214-528-4687	None	214-528-4943	DOS
PCBoard	Clark Development, Inc.	801-261-1686	801-261-8987	801-261-8976	DOS
Powerboard BBS	NUIQ Software, Inc.	914-833-3479	914-833-3623	914-833-1479	DOS
ProBoard	ProBoard International	612-537-8655	612-537-8613	612-537-8659	DOS
RY BBS	The Ryco Company	414-962-5967	None	414-962-1097	DOS
Remote Access	Wantree	913-441-1336	913-441-0442	913-441-0595	DOS
SPITFIRE BBS	Buffalo Creek Software	515-225-9552	None	515-225-8495	DOS
Sapphire	Pinnacle Software	514-345-9578	514-733-8644	514-345-8654	DOS
Searchlight BBS	Searchlight Software	800-780-5483	216-631-9289	216-631-9285	DOS
Sychronet	Digital Dynamics	714-529-6328	714-529-9728	714-529-9547	DOS
TBBS	eSoft, Inc	303-699-6565	303-699-6872	303-699-8222	DOS
TinyHost	Bruce Krobusek	716-924-8284	716-924-4193	716-924-4193	DOS
WWIV	WWIV Software Services	210-631-6090	None	210-631-5841	DOS
Wildcat!	Mustang Software, Inc.	805-395-0223	805-395-0713	805-395-0650	DOS
Kitten	TelPro Technologies	804-442-5865	None	804-442-5867	DOS/OS2
<b>Macintosh</b>					
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Hermes II	Computer Classifieds	206-643-2316	206-643-7830	206-643-2874	MAC
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Second Sight Soft	Scott Watson, FreeSoft	412-846-2700	None	412-846-5312	MAC
Telefinder	Spider Island Software	714-669-9260	714-669-1383	714-730-5785	MAC
hi-BBS	XBR Communication	514-489-1001	514-489-4966	514-489-0445	MAC
<b>OS/2</b>					
Magnum BBS	Gilmore Systems	805-379-3210	805-379-1340	805-379-3450	OS/2
Multi-Net	Multi-Net Comm	503-883-8099	503-883-7879	503-883-8197	OS/2
<b>UNIX</b>					
CocoNet	Coconut Computing, Inc	619-456-2002	None	619-456-0815	UNIX
TEAMate	MMB Development Corp.	310-318-1322	310-318-2162	310-318-5302	UNIX
Z/Max XChange	Z/Max Computer Solutions	315-635-1882	315-635-1908	None	UNIX

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Unlim	29	OS	NO	INT	3RD	3RD	NO	YES	\$299	\$299
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## Apple

1	1	NONE	YES	NO	INT	NO	NO	NO	\$159.95	
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## MS-DOS

-	32	INT	NO	NO	NO	NO	NO	YES	\$995	\$395
10	8	DV	YES	3RD	3RD	3RD	NO	YES	\$49	\$49
255	1	DV	NO	INT	3RD	3RD	NO	YES	Free	Free
1000	16	DV	YES	3RD	3RD	INT	NO	YES	\$680	\$170
999	8	DV	YES	INT	3RD	INT	NO	YES	\$2300	\$99
255	8	DV	YES	INT	NO	INT	NO	YES	\$49	\$49
9	4	DV	YES	OPT	NO	3RD	NO	YES	\$175	\$75
250	1	DV	YES	3RD	NO	3RD	NO	YES	\$529	\$149
255	1	DV	YES	3RD	3RD	INT	NO	YES	\$85	\$85
1	1	NONE	NO	NO	NO	NO	NO	YES	\$45	\$45
Unlim	10	DV	YES	INT	3RD	3RD	3RD	YES	\$399	\$99
250	8	DV	YES	3RD	3RD	INT	NO	YES	\$399	\$99
-	64	INT	NO	OPT	3RD	OPT	NO	YES	\$1995	\$295
1	1	DV	NO	NO	NO	NO	NO	YES	\$25	\$25
999	8	DV	YES	3RD	3RD	3RD	NO	YES	\$320	\$80
250	8	DV	YES	3RD	OPT	INT	MSI	YES	\$799	\$129
999	?	OS	YES	3RD	3RD	NO	NO	YES	\$195	\$195

## Macintosh

-	22	OS	YES	3RD	OPT	NO	INT	YES	\$3450	\$95
10	10	OS	YES	3RD	3RD	NO	NO	YES	\$95	\$95
Unlim	40	OS	YES	3RD	INT	NO	NO	YES	?	\$300
2	2	OS	YES	3RD	NO	NO	NO	NO	?	\$199
200	20	OS	YES	3RD	3RD	NO	NO	YES	\$2,000	\$425
130	?	OS	YES	NO	OPT	NO	NO	YES	\$3,400	\$175

## OS/2

64	?	OS	YES	NO	NO	INT	NO	YES	\$900	\$75
999	12	OS	YES	NO	NO	INT	NO	YES	\$895	\$195

## UNIX

1000	?	OS	YES	NO	INT	NO	NO	YES	\$18,995	\$395
Unlim	?	OS	YES	NO	OPT	OPT	NO	YES	\$2,000	\$2000
Unlim	?	OS	YES	NO	INT	NO	NO	YES	?	\$695

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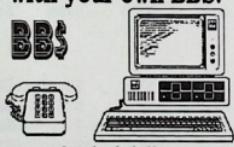
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## Phil Zimmermann: *Pretty Good Encryption Hero?*

by Lance Rose



Phil Zimmermann is a computer programmer and good citizen with an earnest desire to help others. For much of his adult life he expressed his concern through political activism, from marches in the 70's through teaching classes in military policy in the 80's. Along the way, Zimmermann became a computer network user. As the 90's began, he saw a new threat to our civil rights surface: a movement to curtail the ability of network users to discuss matters in private. Many others on the net saw the same thing, but Zimmermann actually did something about it. He melded his humanitarian ideals with his programming and cryptographic skills to create an e-mail encryption program for Everyman called *Pretty Good Privacy*, or PGP. He did this at no small cost to himself. An independent computer consultant, Zimmermann shelved most of his paying gigs while finishing up PGP, missing five mortgage payments on his family's home in the process.

Zimmermann finished PGP in early 1991, released it in the U.S. on the Internet from his home in Colorado, and it instantly achieved worldwide popularity among network cognoscenti. PGP is free, and its customers get a lot more than they bargained for. It uses a powerful RSA public key encryption system, in which each participant owns one or more private key/public key pairs. Messages encrypted by one key in the pair can only be decrypted using the other key.

The great advantage of public key encryption is that, unlike older schemes, like DES, (the current U.S. standard), you can publicly circulate the key for encrypting messages sent to you by others, since only your secret private key can decrypt those messages. When someone sends you a private message using PGP, first it encrypts the message text using the IDEA algorithm, (the International Data Encryption Algorithm, developed in Europe and comparable to DES), and generates a unique, confidential key just for decrypting the message (we'll call it the "text key"). Then he or she uses the RSA public key they received from you to encrypt the text key, and sends you both the IDEA-encrypted message and the RSA-encrypted text key. You would then use your RSA private key to decrypt the text key, and finally use the text key in turn to decrypt IDEA-encrypted message.

It would be conceptually simpler to use only the RSA public and private keys for encrypting and decrypting the text, and cut out the IDEA encryption step, but there is a practical cost. Text encryption using RSA requires far more computer processing time and power than IDEA-based encryption. Zimmermann wanted to give people the full benefit of PGP without wasting time watching their computers crunch numbers, so he used the far easier to process, (but still highly secure), IDEA technique for message texts, and saved the public key RSA process for encrypting only the IDEA text keys, which are a mere 128 bits long. Thus, PGP creates securely encrypted texts, gives people the ability to distribute their public keys far and wide with no compromise in security, and extends strong encryption capabilities to those with small computers.

***Messages encrypted by one key in the pair can only be decrypted using the other key.***

After its release PGP became something of a community development project, and it is now in version 2.3. Other programmers and cryptographers work on enhancing the source code, creating foreign language translations of the user interface, and porting PGP from its original DOS platform to other popular computer platforms such as Mac, Vax, and most flavors of Unix, further increasing its usefulness to network

users of all stripes. In the past two months, however, some dramatic new chapters swiftly opened in the ongoing saga of Phil Zimmermann and PGP.

First, on the positive side, some patent-related questions nagging PGP from the very beginning finally may be close to resolution. As soon as PGP appeared, a West Coast company called Public Key Partners, headed by Jim Bidzos, claimed it violated a patent they held in computer implementations of the RSA encryption algorithm. While Bidzos did not rush into court, he did seek to suppress PGP's distribution. Among other things, he sought out the major online distribution points for PGP, such as large online services like CompuServe and GENIE BBS's including *The Well*, and requested that they immediately remove the PGP files from distribution because they infringed on his patents. Most services discontinued providing PGP, and it soon became an underground classic, difficult to find unless you asked the right people. Fortunately, there were many such spread across the net. Rather than challenge the patent claim, which some net observers think a worthwhile effort, Zimmermann made many requests to Bidzos to obtain a license to use RSA without hassle in PGP. Eventually, network community and industry leaders tried to obtain some sort of compromise between Zimmermann and Bidzos. Bidzos refused all entreaties and continues to oppose PGP.

*The RSA encryption of the DES key, is like those little secure boxes for holding front-door keys that realtors mount on houses...*

In the meantime, a software company named ViaCrypt obtained a license a year or two ago from Public Key Partners, (who appear willing to license virtually anyone but Zimmermann), to use the RSA algorithm in software. ViaCrypt took some time after securing the rights to figure out how it would use them. Finally, last August, it approached Zimmermann with a proposal to create a commercial version of PGP. This was a great business opportunity. ViaCrypt could use its license to legitimize PGP for the commercial market, and both could profit from PGP's high profile among companies interested in encryption. To bring PGP within ViaCrypt's license from Bidzos, Zimmermann and ViaCrypt have been replacing PGP's existing RSA encryption subroutines with comparable licensed subroutines developed by ViaCrypt. Bidzos, through his attorney, publicly expressed some doubt about whether the new



**Phil Zimmermann**  
*of Phil's Pretty Good Software*

ViaCrypt product will fall within its RSA license rights. Anticipating this possibility, ViaCrypt shrewdly trumped it in advance by securing a legal opinion from Brown and Bain, considered by many computer lawyers, (this author included), to be the leading computer law firm in the country, that the hybrid product is within the scope of ViaCrypt's license from Public Key Partners. The new program, tentatively brand named *ViaCrypt PGP*, is scheduled for rollout on November 8th of this year.

If ViaCrypt PGP succeeds in the market, Zimmermann will make some money, though he was never really was in it for the money. He is also working on a new approach to the free version of PGP that may end the patent threats that continually hinder its open distribution on the net. His current efforts center on a set of encryption subroutines called RSAREF, released by Bidzos through another of his companies, RSA Data Securities Inc. (RSADSI). There is a license to the public to use the RSAREF subroutines free for noncommercial purposes: you can't make money selling it, and you can't use it for commercial messaging. By replacing PGP's custom RSA subroutines with publicly licensed equivalents from RSAREF, Zimmermann could end the patent infringement problem.

RSAREF was designed to let programmers develop

privacy-enhanced mail (PEM) programs using a scheme similar to that used by PGP. The text is encrypted using an easy-to-process encryption algorithm involving a single key, ending the patent infringement problem may not have been as easy at it first seemed. The text key is encrypted using the processing-intensive RSA public key scheme. The problem is that for the text encryption stage, RSADSI chose the DES algorithm instead of the IDEA algorithm used in PGP.

DES was not perceived as a problem cipher until August of this year, at a cryptographers' trade show called *Crypto '93*. A respected Bell Northern Research scientist named Michael Weiner dropped a bombshell on the conference by asserting, in essence, that DES was dead, as a dependably secure encryption algorithm. Weiner had designed a high-speed "inside-out" DES processor chip that could test 50 million keys per second, and serve as the basis for a highly effective DES-cracking machine. He had also priced production of the chip with a chip fabricator, and in large but not enormous quantities it would cost about \$10.50 per chip. Using these figures, he said a computer with 7,000 such chips would cost a vast amount, and could find the key to any DES-encrypted message within 7 hours by testing every possible key within that time, with a mean key-cracking time of 3.5 hours per encrypted message. For \$100 million, well within intelligence agency budgets, a computer could be built that would crack the keys for DES-encrypted messages at a clip of two minutes per key. This result would be achieved for texts encrypted with 56 bit DES keys, where the decryptor has a little bit of plain text he knows would be in the encrypted message, such as someone's name, or a word or two. There are DES encryption schemes using longer keys, but the 56 bit key is the U.S. government standard, and the official or de facto

standard in many industry applications as well.

Weiner's brute force approach would be marvelously effective despite its lack of elegance. For PEM computer programs using RSAREF in its current form, there can no longer be dependable privacy. All texts encrypted using RSAREF's standard 56 bit DES approach will, from this point forward, be vulnerable to cracking at some point by a Weiner-type supercomputer. It will be pointless to hide the DES key inside RSA encryption. Owners of the supercomputer could find the key directly from the text, and need not bother with the encrypted key. As Phil puts it, the RSA encryption of the DES key is like those little secure boxes for holding front-door keys that realtors mount on houses being shown to prospective buyers. The little box may be nearly impossible to break into without the proper code, but there's always another possibility for getting into the house without permission: break down the door or smash in the window.

There's a way to avoid this with RSAREF, by invoking deeper subroutines in the package to create PEM programs that use text encryption schemes more dependable than the suddenly-reduced DES, such as the IDEA algorithm used today in PGP. IDEA uses a 128 bit key instead of the 56 bit key standard in DES, and its security has not been seriously questioned to date, despite spirited attacks by some of the world's mightiest cryptographers. Unfortunately, the current RSAREF public license only permits programmers to use the high-level routines that require DES, and prohibits using the deeper routines to bring in other encryption algorithms - the very use necessary for PGP to remain dependably secure. However, after the Weiner revelation, RSAREF will not be in much demand if it continues to restrict PEM programmers to 56 bit DES.

Accordingly, it is rumored that a public license to the deeper, roll-your-own algorithm subroutines in RSAREF may soon be forthcoming from RSADSI. If this new license is issued, Zimmermann may finally be home free in his quest to create a free, effective PGP with no specter of patent infringement hovering over it. It is possible that by the end of this year or early in the next, we will see both a commercial ViaCrypt PGP, and a free PGP for personal noncommercial use.

That's the good news. The bad news is that Phil Zimmermann is now the target of an investigation by the U.S. attorney's office into violations of the International Traffic in Arms Regulations, or ITAR. ITAR is a set of laws administered by the State Department, designed to keep war-grade weapons from being exported out of the U.S. to certain foreign countries. While ITAR mainly regulates weapons-like parts for tanks, jets and submarines, it also regulates encryption devices, including encryption software, as "munitions" due to their military intelligence value. The U.S. attorney is not commenting at this early stage, but observers agree the investigation relates to PGP's worldwide distribution through the Internet. This distribution constituted a clean end run around the State Department's normal procedure of placing a road-block against all cryptography exports, until they are reviewed by the National Security Agency for military potential. What is unclear, is whether Zimmermann did anything wrong by placing PGP on the Internet on computers located within the U.S.

There are very good reasons for saying that Zimmermann's actions were totally legal, and that he should not have this cloud over his head. For one thing, Zimmermann did not intend for PGP to be exported. He was never motivated to put out an international encryption standard. To the contrary, his

motivation was the perception that political forces within the U.S. seemed to be pushing towards outlawing private encryption in this country. In fact, he acted specifically to put PGP into circulation quickly while it was still legal in this country, before any laws might go into place prohibiting domestic use of privately developed encryption software.

For another, Internet users outside the U.S. helped themselves to PGP. Zimmermann did not send PGP anywhere outside the country. He made it available on computers within U.S. borders, which is perfectly legal in itself. By analogy, I could legally go door-to-door in this country selling devices enabling people to encrypt their telephone discussions. I can even leave an open box of them in front of my house in New Jersey, and tell all my neighbors to pick one up for their own use. If some foreign tourists take a few and spirit them back into their own countries, why should I be held guilty for export violations?

In addition, Zimmermann and all the users of PGP in this country have their First Amendment rights. Zimmermann has the right to freely publish the PGP program in this country. The Constitution says Congress will enact "no law" restricting freedom of speech and of the press. There are no Amendments to the Constitution that contain exceptions for speech or press distributed through the Internet. Additionally, people who send electronic messages to each other have the right to send them encrypted without government interference, and legal action against PGP would certainly interfere with such activities. In this instance, PGP's free speech rights derive from its assistance of PGP users in exercising their own rights of free speech. This kind of derivative free speech protection is very powerful. It is analogous to the protection of speech distributors applied in the past by the Supreme Court and

other federal courts to book sellers, magazine distributors, and even CompuServe.

Finally, there are privacy considerations. This is not really a legal argument, as much as a question of the limits of appropriate government intrusion into peoples' private lives. The question comes up almost daily these days, in settings ranging from the privacy of employee e-mail to the swelling commercial market for extensive data on each citizen in our country of consumers. A government push against the availability of PGP, regardless of the legal cause, would count as yet another blow against the dwindling ability of us all to retain a modicum of personal privacy. As the cypherpunks are often heard to say, "if privacy becomes outlawed, only outlaws will have privacy."

Powerful as these and other arguments are, they will not deter government action on their own. The government can offer the fairly standard legal argument that Zimmermann "knew or should have known," that placing PGP on the Internet would result in worldwide export in violation of the ITAR. After speaking with Zimmermann, I am not sure he actually knew, in particular, that there was a law called ITAR, or that it applied to encryption software. As mentioned above, he certainly was not out to distribute PGP worldwide. Whether the government proceeds will depend as much on political factors as on its view of the legalities involved.

The investigation is at an early stage, and in fact, has not been directed formally at Zimmermann. The only activity in public view so far was the service of subpoenas for document production by the U.S. Attorney's office in San Jose, CA on Viacrypt in Phoenix, AZ and another company named Austin Code Works in Austin, TX. Austin Code Works distributes PGP and other free software for encryption and

other uses in source code form, for little more than the price of a computer disk. According to Zimmermann, he has no business relationship with Austin Code Works. He also had no idea they were distributing PGP until he read about the subpoena served on them. As soon as Austin Code Works was served, its president, Grady Ward, went public on the Internet with a ringing defense of its position. Ward claims they do not distribute executable programs, but only "source code algorithmic descriptions" of encryption techniques, thus falling under a "technical data" exception to ITAR. The State Department publicly countered that position, and is requiring Austin Code Works to register as a munitions dealer.

*"If privacy  
becomes  
outlawed,  
only outlaws  
will have  
privacy"*

There is no telling whether the investigation will proceed to charges against Zimmermann or others, but Zimmermann and others in the network community intend to be prepared. Phil Zimmermann's attorney, Colorado criminal lawyer Philip Dubois, is accepting contributions for Zimmermann's defense, (He can be reached at Philip Dubois, Esq., 2305 Broadway, Boulder, CO 80304, (303)444-3885, [dubois@csn.org](mailto:dubois@csn.org)). The Electronic Frontier Foundation is also stepping forward in Zimmermann's defense, with financial commitments from EFF and several of its individual board members, and efforts to rally public support for Zimmermann and PGP.

A lingering question in the current investigation is why the government waited over two years after PGP's release to start it up.

Some speculate it is due to a link between the investigation and the government's efforts to establish a new encryption standard named *CLIPPER* as the replacement for the aging DES standard. The government has repeatedly stated it will not seek to make Clipper the only legal encryption standard in this country by outlawing all others. But if it proceeds to charge Zimmermann and PGP as a result of the current investigation, it could have the effect of using the government's legal artillery to blow away one of Clipper's most prominent competitors.

Speculation aside, PGP's legal situation is slowly maturing, and within another year or so we should know for sure whether it's legal or illegal in the U.S. By that time, it will be in the hands of millions of people the world over, each using PGP to create his or her own private communications channel. Hopefully, we will not have to witness the ironic spectacle of PGP being banned in the country of its birth, while freely in use in the rest of the world.

*[Lance Rose is an attorney practicing high-tech and information law in Montclair, NJ. He can be found on the Internet at [elrose@well.sf.ca.us](mailto:elrose@well.sf.ca.us), and on Compuserve at 72230.2044. He is also author of *SysLaw*, the legal guide for online service providers, available from PC Information Group at 800-321-8285.*

*Pretty Good Privacy is available in its latest July 1, 1993 release as *PGP23A.ZIP* with C language source code in *PGP23ASR.ZIP*. Phil Zimmermann can be reached at Boulder Software Engineering, 3021 Eleventh Street, Boulder, Colorado 80304; (303)541-0140 voice/fax; or via Internet at [prz@acm.org](mailto:prz@acm.org)*

*ViaCrypt will make the commercial PGP available at an intro price of \$100. ViaCrypt, 2104 W. Peoria, Phoenix, AZ 85029, (602) 944-1543.*  
- Editor

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# DIRECT DIAL

## THE LIBRARY OF CONGRESS ONLINE

by Julia L. Wilkinson  
(julia@aol.com)

**W**hat's the ultimate location for an information junkie? How about the world's largest library, boasting nearly 100 million pieces of literature spanning 545 miles of shelves: the Library of Congress. Founded as a research source for the legislators of the United States, it has metamorphosed into something much more useful to the general public who pays taxes for its maintenance, and is becoming more and more accessible as computer networks and the Internet continue to multiply like so many rabbits on a diet of ginseng-laced Spanish fly wings.

The Library of Congress now operates a free BBS with helpful general information about its programs, exhibits, events, hours, and even job openings. The BBS, known as the Library of Congress News Service, allows callers to receive portions of articles from the LC Information Bulletin about two weeks before they are disseminated in print. Callers are limited to 45 minutes per call, so it is recommended that you make use of file downloading as much as you can to limit the amount of time you spend reading information from the system.

While we may be a long way away from full-text access to the immense holdings of the Library of Congress, some documents, photographs, and even sound bites will be available via the library's "American Memory" project. The American Memory collections include such treasures as documents from the founding fathers' Constitutional Convention of 1789, interviews with Americans during the Great Depression, Civil War photographs, films of New York City from the early 1900s, and sound recordings of President Warren Harding and General John J. Pershing. "Images in some of the collections will probably be turned over to the private sector," said Guy Lamolinara, LC News Service Editor.

Although the News Service does not provide access to the Library's bibliographic data bases, it covers a variety of topics of interest to the bibliophile.

The Service's top-menu level categories are as follows:

**MEDIA** — Items of interest to the media, such as news upcoming conferences, exhibit openings, major acquisitions, other announcements, as well as features suitable for reprinting in other publications;

**LIBRARY** — Information of particular interest to librarians, such as news from the Cataloging Distribution Service of new products, or Collections Services, new LC publications, changes in LC procedures in cataloging and other areas, major personnel appointments, professional meetings.

**PUBLIC** — News for the public such as exhibit openings and features on the Library.

**CALENDAR** — A calendar of events.

**ACCESS** — Access to the Library—where to locate entrances, hours of operation of the Jefferson, Adams and Madison buildings, hours of the reading rooms, the National Library Service for the Blind and Physically Handicapped, telephone numbers, visitor services, & food service.

**FACT** — General information about the Library and Services to the Nation.

**HOW TO** — How to download information from the News Service.

**JOBS** — Job opportunities at the Library of Congress

**NEWS** — New features recently added to the LC News Service.

Other menu items include:

**CFB** — Center for the Book News

**DIRECTIONS** — Directions for new users of the LC News Service

**ADA** — Services to Disabled Persons

**PUBLICATIONS** — LC publications and other products

**EXHIBITS** — Exhibitions at the Library

**RARE BOOKS** — Rare Book and Special Collections Division News

**GEOGRAPHY** — Geography and Map Division News

**AFRICAN** — African and Middle Eastern Division News

**ASIAN** — Asian Division News

**EUROPEAN** — European Division News

**HISPANIC** — Hispanic Division News

**CHILDREN** — Children's Literature Center News

**MUSIC** — Music Division News

Poking around the various menus you can pick up a lot of valuable information. Under FACTS, for instance, you will learn that the library was founded in 1800, first housed in a boarding house and later in the Capitol.

The original bill mandating the Library, signed by John Adams, provided, among other items, \$5,000 "for the purchase of such books as may be necessary for the use of Congress—and for putting up a suitable apartment for containing them therein. . ." The first books arrived from England via ship in 11 hair trunks and a map case.

But the real roots of what is today's national literary treasure trove comes from the personal book collection of one man: Thomas Jefferson. After the original Capitol was stonched by the British in August 1814, Jefferson offered his own library, acquired over a period of 50 years, from such places as Paris. He believed in amassing "everything which related to America, and indeed whatever was rare and valuable in every science."

Although the library does not actually have a copy of every book ever published in the United States, it does have more than 90 million items in formats that range from papyrus to optical disc. These items include 27 million books and pamphlets in 470 languages; 1,200 newspapers (some dating back to the 17th century); 100,000 motion picture titles; 80,000 television broadcasts; 500,000 radio transcriptions and over 1.5 million other sound recordings; as well as about 7 million microforms.

The items are acquired at a rate of 10 per minute. It also houses "the world's largest and most comprehensive cartographic collection — almost 4 million maps and atlases, dating back to the middle 14th century — and a 7 million-piece music collection that includes autograph scores, correspondence of composers and musicians," among other things.

One of the library's rare gems is one of three surviving vellum-printed copies of the Gutenberg Bible, and the Giant Bible of Mainz.

Callers are encouraged to leave their suggestions for enhancements to the service. In fact, several of the service's recently added 20 new menus sprang from callers' requests, according to Lamolinara.

Library of Congress News Service is available at (202) 707-3854. For information call Guy Lamolinara, Editor, LC News Service, at (202) 707-9217. The SysOps are Guy Lamolinara and Rose Marie Siddiqui.

The Library of Congress News Service is one way those who don't live near Washington, D.C. can tap into this historical gold mine, but here are other ways as well. The library has an interlibrary loan program for researchers working at other libraries across the country. You can also buy photographs, photostats, facsimile prints and microfilms by mail, fax, and electronic mail "in some cases."

## The Library of Congress on America Online

Portions of LOC exhibits are also available on the national commercial online service America Online ("AO"). The LOC area on AOL has a graph interface, with some exhibits accessible by clicking on a colorful icon. The AOL is divided into the sections "Tour the Library," "Scrolls from the Dead Sea," "The Secret Soviet Archives," "1492: An Ongoing Voyage," the messaging section "Talk About the Archives," and "The Atrium Conference Hall."

Those interested in the nuances of copyright will want to explore the Copyright Office, learning "Copyright Basics" and how to go about researching the copyright status of various works.

One of the more interesting and controversial exhibits represented on AOL is *The Dead Sea Scrolls*. As explained in the area's introduction, the scrolls were initially stumbled upon by Bedouin shepherds searching for a stray goat. They found a lot more than that: jars filled with ancient scrolls that carbon dating revealed dated from the third century B.C.E. to 68 C.E.

The presence of the scrolls raised several questions, such as why they were hidden in the caves, who hid them, and what significance the scrolls' content is to Judaism and Christianity.

The exhibition on AOL consists of twelve Dead Sea Scroll fragments and archaeological artifacts courtesy of the Israel Antiquities Authority as well as supplementary materials from the Library of Congress. As the introductory text explains, "It is designed to retell the story of the scrolls' discovery; explore their archaeological and historical context; introduce the scrolls themselves; explore the various theories concerning the nature of the Qumran community; and examine some of the challenges facing modern researchers as they struggle to reconstruct the scrolls from the tens of thousands of fragments that remain."

The online version of 'Scrolls From the Dead Sea' is devised to recreate the feel of the dig: menus represent various rooms and geographical features of the site, where the online visitor can uncover the objects as the archaeologists did.

There are also "Voices" message boards containing debates by real scholars about all kinds of issues sur-

rounding the scrolls and the site. In the museum exhibit you can hear these debates on audiotape but online you can contribute your own ideas.

For free software and a trial membership, call America Online at 1-800-827-6364.

## Other Library of Congress Resources

The Library of Congress' National Reference Service (NRS) encourages full use of local library resources before contacting the Library of Congress. (A story on the National Reference Service is available on the LOC News Service).

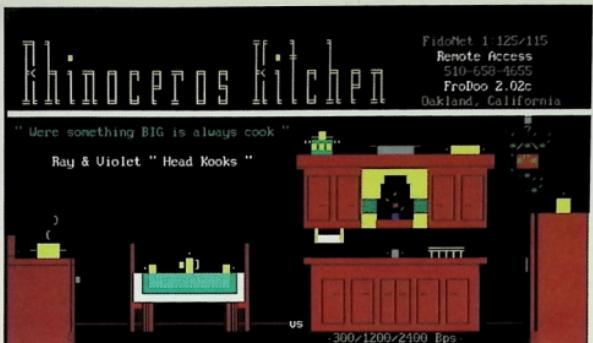
NRS can be reached by writing National Reference Service, Library of Congress, Washington, DC 20540-5570, or by calling (202) 707-5522; TDD: (202) 707-4210 (service available to the hearing impaired); or by fax: (202) 707-1389.

## ANSI ARTIST IN THE RHINOCEROS KITCHEN

by Jack Rickard

While about 88% of the online population is male, the addiction to computers and online services is not entirely gender specific. When Violet Stymack set up house in Eugene Oregon with her significant other, Ray, he did mention in passing that he spent a bit of time with his computer. But she thought at the time - how much time can a person spend with a computer anyway? She soon found it could be substantial, and it was a bit of a source of conflict.





Ray downloaded a game titled "Hack" and taught Violet to play hoping she would view the computer with a little less animosity. She did play with it a bit, and in fact beat the game 14 times thereafter essentially taking over the computer for her own use. After helping a friend set up a BBS, Ray had a new love. He wanted to set up one of his own. They called it the Rhinoceros Kitchen and he set up an ANSI screen editor called **THEDRAW** and asked Violet to help design the screens.

Violet did design the screens. Another local sysop asked her to help him with a welcome screen. Soon she was doing ANSI welcome screens for sysops all over town.

Violet and Ray hooked their BBS up to the International FidoNet, and Violet started browsing the nodelist for interesting BBS names. When she would find one that caught her fancy, she would design an ANSI welcome screen for them and just netmail it to them gratis. There was no accompanying solicitation for anything other than a message acknowledging they were using the screen. Soon, BBS operators began using her screens, and sending the requested acknowledgement messages.

Today, over 1500 bulletin boards in 25 countries use Violet Stymacks' custom ANSI welcome screens and have acknowledged them with a netmail thank you message. Hundreds of others may be using them, but the 1500 comprises those that have actually sent thank you notes. Some have called voice internationally from Holland, Germany, Australia, and Russia to say hello and thank Violet for the welcome

screen. You can recognize them by a discreet V.S. appearing somewhere on most of them.

Violet and Ray's BBS, Rhinoceros Kitchen 1.125/115, along with Violet and Ray, have all relocated to Oakland California. But Violet continues to churn out hundreds of ANSI screens. They did have them all displayed online via a menu system that took several years to build up as an ANSI art gallery. But a recent hard disk crash wiped out the menu structure. They do have the full collection of screens available for download in a series of files. We downloaded **RTHRU-Z.ZIP** and found literally hundreds of screens that comprises what looks like an international BBS catalog more than anything else. Violet Stymacks, Rhinoceros Kitchen BBS 1.125/115, 919 60th St., Apt. 1, Oakland, CA 94608; (510)658-7317 voice; (510)658-4655 BBS.

## OS/2 SHAREWARE BBS

We might make the case that the shareware method of software distribution is actually a communications system. It was born in the days of computer chaos when every different computer model developed its own lone of tips, tricks, and software, largely developed by hobbyists, who shared what they knew and banded together to survive in a world where nothing was standard.

Today, shareware for the PC has become somewhat Plebian. But for some niches of the computer world, there is still a need to communicate through and about software. IBM's OS/2 operating system has drawn a

strong following of adherents, and the latest 2.1 release of the program has sparked renewed interest. One of the points lurking in the background of every evaluation of OS/2 as a solution revolves around the availability of hardware drivers and software that will take advantage of OS/2's capabilities. And it is in this arena that bulletin boards and shareware software shine as a means of conveying information and functionality, in a world clouded with information about MS-DOS.

Peter Norloff runs one of the most impressive bulletin boards we've found centered on the OS/2 operating system. It runs under OS/2 as a multilink BBS, and it sports the largest collection of OS/2 shareware we've yet encountered. It has a thriving user base that fight for access on every line.

The system was originally launched in March of 1990, and has taken over 240,000 calls in the three and a half years since. It currently takes some 23,000 calls monthly from a user base of about 5000 callers. Norloff upgraded the system in October to an Intelisys 486 DX2/66 EISA bus system with 32 MB of RAM and 2.3 GB of hard disk space. Using Maximus 2.01wb BBS software, and a Digiboard 16em 16-port RISC-based serial card, Norloff now runs 12 high-speed lines from a single machine under OS/2 2.1.

"The single machine easily supports 12 nodes plus local activity and support functions," said Norloff. "It will have no problems with an additional 4 lines and could probably be pushed to 24 or 32 lines with a little more tuning. The whole operation runs smoothly thanks to OS/2 2.1's high performance multitasking. It's not unusual to have all the nodes active with callers downloading files and creating bundles of mail for QWK compatible offline mail readers. Even with that level of activity, it's rare that a caller sees any indication that anyone else is online."

The reason they are calling is, of course, the 54 message area discussions surrounding OS/2, and the file areas. The OS/2 Shareware BBS sports 26 file areas with some 5,646 OS/2 shareware programs comprising nearly 700 MB of files. We found communication programs, LAN drivers, printer drivers, games, programming files, and a whole section devoted to BBS software and utilities for OS/2. It represents one of the most concentrat-

ed and well organized collections available for this operating system. We were particularly struck by the wealth of TCP/IP and UUCP utilities and programs available for OS/2. IBM makes a TCP/IP add-on available for OS/2 that has gained some pretty favorable reviews. From what we understand, the SLIP program that comes with it is a little bit broken - not to worry, a shareware replacement on the OS/2 Shareware BBS will fix you in a heartbeat.

We did download the ALLFILES.ZIP file from the board - a 933KB text file compressed to about 300KB listing every file available on the system. With a 14.4kbps V.32bis connection and quite good line quality, we averaged about 1325 characters per second. While somewhat less than ideal, it was a respectable rate. The Maximus BBS presents a plain, but serviceable interface for messages and files.

Early works at LC Technologies in Fairfax Virginia. They develop a \$17,500 turnkey computer system for the disabled that allows them to control a PC with eye movements - titled EyeGaze. But Norloff's hobby is as an OS/2 evangelist, and we found him so knowledgeable on the setup and configuration of OS/2, that he serves as a natural resource to the OS/2 community on his BBS. The top annual access rate is \$48 per year, but the system is quite open to callers on their first call. Peter Norloff, PO Box 3451, Fairfax, VA 22038; (703)352-2151 voice; (703)385-4325 BBS; Internet 70324.2146@compuserve.com.

## THIS MONTH'S LIST

Far up north, in the chilly reaches of Canada, we find this month's featured BBS lists. BBS bibliophile Jeff Young, from Ontario, Canada, keeps a 312 member list including the greater metropolitan area of Toronto, (Canada's largest city), with a population of well over four million people. The area encompassing the list is known as the "Golden Horseshoe," and wraps around lake Ontario, bordering the United States. Young said he goes through his list daily, updating files and making sure that listed BBSs are still online. His list is still in its infancy, as he has only been putting it

together for about six months. With 312 members already, we are sure that he is headed in the right direction.

In the future, he hopes to expand his list to include the specific functions and data that can be found on particular bulletin boards, as well as include software information. He has also just started writing an online column for the Seneca College newspaper.

Getting more people into BBS'ing is his main goal. "I just want to get people interested in it (BBSs), and to have it grow," He said, "I think that's important."

"**Tradewinds**" is Young's favorite board because there are 700 megs of files, it is user friendly and he likes the sysop, Bob Uran. Uran, he said, helped him out on a number of occasions via telephone, explaining things to him and 'walking' him through trouble spots. What a nice guy! The Ontario list is available for download from Tradewinds BBS in Toronto at (416)503-4388.

There are, however, other boards that are not so user friendly. "Some sysops," he said, "have a very nasty attitude about their boards." Particularly he cited the rules that some of them apply about their boards that are "aggressive" and a real turn-off to new users.

Young is open to suggestions, new information, or anyone just wanting to say "Hi." He will supply his list at no cost to anyone who is looking for it, and can be reached at e-mail address: Compuserve 73354,2501; or send a self-addressed stamped envelope to:

Jeff Young  
P.O.Box 67023  
2300 Yonge Street  
Toronto, Ontario  
Canada  
M4P 1E0

Keeping Alberta's BBS lines from becoming lost in a growing menagerie of modems, sysops, and users, Stephen Decarie certainly has his work cut out for him keeping his 145 member list current. Updating the list every six months, Decarie finds that the winter months tend to be more active than the summer months. He attributes this to other interests in the warmer months and students.

Like many others list keepers, Decarie began keeping a list after he

became frustrated with existing lists which he found both limited and unverified. For the past two years he has been giving his list out to his online comrades at their request. The next addition he plans to make to his list is the software used by the BBS, and any special user software that would be required to access the BBS, i.e. ROBO board. He would also like to include information on graphics usage in the lists, such as RIP. Although no RIP boards currently exist in Calgary, Decarie said he has talked with two sysops recently who informed him that they are looking in that direction. The T8000 BBS, which is Decarie's first choice for a local board, he describes as, "most useful, as a local system...not only for files, and access to internet mail." It's a multiline system operated by Brian Simpson in Calgary, Alberta using TBBS Software.

The boards that catch his eye most often, are those that have good operational net-mail facilities, easy to use and understand commands, a workable, comprehensive menu that is not too crowded on a single page, good use of graphics and the availability of recent versions of files. Stephen Decarie and his list can be reached on the T-8000 board a (403)246-4487.

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# ONTARIO, CANADA AREA 416 BULLETIN

Title	Phone	Location	Title	Phone	Location
A Feminist Place	463-7263	Toronto	Digital Pixel	298-1487	Toronto
A Wishing Well BBS	740-6234	Rexdale	Digital Underground	699-2844	Toronto
A-Club	226-0597	Willowdale	Dirac Systems Support	283-7157	Scarborough
ATI Technologies	756-4591	Toronto	Direction 2000	397-4994	Scarborough
A_X_A_X_A	422-5723	Toronto	Dits and Bits	638-4794	Toronto
Abacus Online Services	538-7911	Toronto	EGS/Philo	286-6191	Toronto
Abug BBS	536-6084	Toronto	Eastern	283-7637	Scarborough
Access-Pc	491-9249	Toronto	Eclipse Info. Services	222-5473	Willowdale
Adults BBS	286-6367	Toronto	Elxis/2	487-8094	Toronto
Adults/Black Orchid	286-7550	Scarborough	Enter the Dragon BBS	663-4131	Toronto
Adventure Society	226-0042	North York	Etobicoke Public Library	245-0062	Etobicoke
Air Search + Rescue	259-0729	Etobicoke	Excalibur BBS	484-0607	Toronto
Alcatraz Prison	751-6032	Toronto	Fair Jewel	690-2464	Toronto
Alex Anonymous	229-9232	Toronto	Fists of Fury	241-1376	Etobicoke
Amaranti Athenea	231-9944	Toronto	Forest Hill Multi-Media	393-8214	Toronto
Angel Asylum	767-0173	Toronto	Four-Stars	694-4091	Toronto
Argentic	265-4025	Scarborough	Full Metal Planet	321-6615	Toronto
Arikon Info. System	593-7460	Toronto	Futuretron Online	868-1888	Toronto
Artful Applications	538-3107	Toronto	Genie	515-8192	Toronto
Artsy Fartsy BBS	465-7436	Toronto	GRAVEYARD BBS	466-5141	Toronto
Atomic Autumn	237-1623	Etobicoke	Game Chamber BBS	236-0944	Toronto
Axis	466-3722	Toronto	Gamers' Guild BBS	497-2124	Willowdale
Bad Connection BBS	630-8645	Toronto	Gangster's Touch	530-0234	Toronto
Baudeville BBS	283-0114	Scarborough	GeoBoard Enterprises	630-4367	Toronto
Beverly's Hillbilly	253-0732	Toronto	Gidget Info. Service	658-3958	Toronto
Beverly's Hillbilly BBS	253-6505	Etobicoke	Good Tidings	496-8027	Willowdale
Big Blue	491-9050	Toronto	Graviton City	322-5447	Toronto
Bits N'Bytes	532-1784	Toronto	Grey-Hawk BBS	740-1839	Rexdale
Black Adder	222-8366	Willowdale	Guest House	391-2542	Toronto
Black Orchid	286-7509	Scarborough	Homefries BBS	242-2241	Weston
Blakstar Systems	656-4532	Toronto	Hose's Strange Brew	769-5063	Toronto
Bloom Beacon Amiga	283-5924	Scarborough	House of Doors	222-3769	Willowdale
Board Beyond Belief	766-3342	Toronto	Hypnotic Rhythm	431-5797	Toronto
Bob's Board	744-0070	Rexdale	IDS Place	252-1133	Etobicoke
Bumble Bee's Nest	978-4582	Toronto	IO	736-5258	Toronto
Buy and Sell DataBase	964-6886	Toronto	IceBurg BBS	265-6812	Scarborough
Buy and Sell DataBase	510-2290	Toronto	Ikon Window	244-8699	Toronto
CMIS	798-4713	Toronto	Image Data Online	778-5700	Toronto
CRS Demo	298-2530	Toronto	Info Access	767-8046	Toronto
Cabaret	966-2675	Toronto	Intel Data Ban	283-0801	Scarborough
Canadian Game Line	798-7730	Toronto	Interlink Communications	626-0406	Etobicoke
Canadian Remote Systems	461-4904	Toronto	Intro To Insanity	281-3441	Toronto
Canadian Tribune	690-2809	Toronto	Intro to Reality	757-8069	Toronto
Carnage! BBS	924-9541	Toronto	Irata's Den	465-4640	Toronto
Church Street Citadel	798-7520	Toronto	Junction Triangle	766-8390	Toronto
CityLink	769-8972	Toronto	KEB IV	285-5444	Toronto
Clone Systems III	267-6559	Toronto	Karibu BBS	531-2188	Toronto
Cloud 9	260-5990	Toronto	Keroppi BBS	503-1289	Toronto
Club 2000	755-6045	Toronto	Klingon Board of Prey	229-1378	Toronto
Club Insanity	691-0679	Scarborough	LOGIC	487-9771	Toronto
Club Insanity Node #1	462-2922	Toronto	Learning Experience	665-3263	Toronto
Club Mac	754-2556	Scarborough	Leftover Hippies	466-8931	Toronto
Clubhouse	461-5853	Toronto	Light Side	658-3299	Toronto
Collectors BBS	633-0185	Toronto	Logix Probe	622-7427	Toronto
ComSpec I	761-1894	Toronto	Lost Angels	694-2487	Toronto
Comp. Net Canada	777-2238	Toronto	Lost Souls Society	620-9709	Toronto
Compu Ad	783-4684	North York	M31	439-0493	Toronto
Compu-Tel	266-1881	Toronto	MAGIC BBS	288-1767	Scarborough
Computer Link	233-5410	Etobicoke	MAGNACOM	422-0984	Toronto
Computing Canada Online	497-5263	Willowdale	MTAC	469-0611	Toronto
Compvoice	245-3807	Etobicoke	Maramatha BBS	798-2563	Toronto
Cornerstone BBS	240-1435	Toronto	Matrix	364-2999	Toronto
Cow Girl's Rodeo BBS	466-0363	Toronto	Medieval Nights	754-2443	Scarborough
Crescent College	449-9434	Toronto	Mega GIFs BBS	321-5645	Scarborough
CyberSquid	422-3152	Toronto	Metastasio's	487-9093	Toronto
Cyberdyne Systems BBS	489-6502	Toronto	Metropolis	292-8757	Toronto
Cyberspace BBS	754-7310	Scarborough	Micro Stop II	283-6710	Scarborough
Cyboard	284-6544	Toronto	Micro Stop III	284-3028	Toronto
Dark Prophecy BBS	223-0073	North York	Midpoint	531-5048	Toronto
Dark Realm	298-1730	Toronto	Millenium House	743-9187	Rexdale
Dark Side Games	658-8527	Toronto	Millenium III	466-9343	Toronto
Dark-Horse BBS	248-1525	Weston	Monty Pythons Flying BBS	690-9379	Toronto
Data Soft Systems	752-4175	Scarborough	Mount Olympus BBS	425-9288	Don Mills
Datapac	868-4000	Toronto	Nemesis BBS	744-8884	Rexdale
Datatech	221-3611	Toronto	NeoPsychedelic	443-8671	Toronto
Deep Space #2	747-1171	Toronto	Net 250 NC ConSoft	483-0566	Toronto
Defcon Enterprises	234-0805	Etobicoke	Night Owl	693-1082	Toronto
Del Online	397-6022	Scarborough	Nightstar BBS	787-3805	Toronto

Title	Phone	Location	Title	Phone	Location
Nirvana	467-7488	Toronto	The Career Board	487-1601	Toronto
North Toronto Connect II	487-4339	Toronto	The Cat's Whisker	975-1813	Toronto
North York Pub. Library	396-3748	North York	The Cellar	526-0131	Toronto
Nowtown	223-2186	North York	The Chrome Castle BBS	422-2143	Toronto
O.K. BBS	490-1556	Scarborough	The Circus of FEARI!	396-8118	Scarborough
O.J.'s	972-1467	Toronto	The CompuNet BBS	769-0022	Toronto
Old Folk's Home East	244-8078	Toronto	The Connection	229-9732	Toronto
OnLine Service	783-0342	North York	The Council of Kings	633-3314	Toronto
One Less Car	489-0147	Toronto	The Crystal Gryphon	429-4236	Toronto
OptiComm	965-2475	Toronto	The Dragon's Lair	699-8718	Toronto
OptiComm BBS	921-4712	Toronto	The Dungeon BBS	926-8734	Toronto
PC Companions	798-2400	Toronto	The Edge of Reality!	762-3914	Toronto
PC Connect	733-9052	North York	The Falcon's Nest	393-0342	Toronto
PC-Flagship	944-8321	Toronto	The FlatEarth	469-0311	Toronto
PCCT BBS #1	636-6394	Toronto	The Flight Deck BBS	299-1164	Scarborough
PIGBREATH MEDIA	690-8080	Toronto	The Forbidden Zone	287-1836	Scarborough
PN Junction	221-3592	Toronto	The Gay News Service	593-0470	Toronto
PROGRAMMERS AID	466-6799	Toronto	The Good Fishing BBS	241-3936	Etobicoke
Pan Transit	539-0523	Toronto	The Grand Hotel	491-0370	North York
Peregrine's Eyrle	657-1707	Toronto	The Grip	233-7435	Etobicoke
Photo 334 BBS	539-9591	Toronto	The HOT Spot	533-2100	Toronto
Pinnacle Club	362-2373	Toronto	The Haig Zone	225-6997	Toronto
Pleadies Systems	225-2315	Toronto	The Hong Kong Connection	498-9903	Scarborough
PneV91 Generic	237-1204	Etobicoke	The Inner Sphere	231-9392	Toronto
Precision Point	391-5327	Toronto	The Island	398-3313	Toronto
Primetime BBS	461-1010	Toronto	The Jail BBS	762-9316	Toronto
Pro-Genetic	237-0308	Etobicoke	The Job Search Board	588-3821	Toronto
Programmer's Depot	699-5158	Toronto	The Last Arg	968-6633	Toronto
Programmer's Guild	693-7108	Toronto	The Lion's Den	395-4328	Toronto
Quasar Communications	733-2087	Willowdale	The Lottery Exchange	398-5140	Toronto
R-node	249-5366	Toronto	The Lunatic Fringe	744-4372	Rexdale
RT Labs	867-9663	Toronto	The Midway	763-5062	Toronto
Realm of Darkness BBS	495-8363	Toronto	The Mohawk	438-8998	Scarborough
Roman Kowalcuk	766-1080	Toronto	The NEXT BBS	431-4529	Toronto
Rose Media	733-2285	Toronto	The New Frontier	465-5366	Toronto
Rose Media 4	226-9260	Willowdale	The Next BBS	431-6219	Toronto
S & J BBS	463-9438	Toronto	The Pink Flamingo	944-0178	Toronto
S.I.A.C.C.	694-2484	Toronto	The Piper's Pub	769-8126	Toronto
S.U.I.T. BBS	691-8245	Toronto	The Pleasure Palace	496-1776	Scarborough
Safety Shoppe	429-8251	Don Mills	The Powder Keg	492-5756	Toronto
Sales BBS	321-3598	Toronto	The REGAL EAGLE BBS	744-2922	Rexdale
Saved By Technology	964-6434	Toronto	The Riot	767-7529	Toronto
Scrapules	661-5426	Toronto	The Running Man	252-5367	Etobicoke
Seed Sowers	498-5259	Toronto	The Stupid BBS	502-9031	Toronto
SeedSowersFriendly #2	498-5962	Scarborough	The Switchboard	484-0549	Toronto
Seneca College REDVAX	492-0239	Toronto	The Switchboard II	484-9454	Toronto
Shadow City BBS	781-4599	Toronto	The Total Obsession BBS	297-7121	Toronto
Ship to Shore	538-2496	Toronto	The Wall	763-4602	Toronto
Silver & Gold	658-9000	Toronto	Timberline Online	537-1242	Toronto
Sistem - A	491-4179	Willowdale	Toronto Public Library	393-7670	Toronto
SkyStar	740-4412	Rexdale	Toronto Twilight	663-8779	Toronto
Smart Alec	253-5900	Toronto	Total Indifference BBS	614-1713	Toronto
Softor Systems	265-8253	Scarborough	Totally Board	221-8768	Toronto
Software Canada Online	367-0917	Toronto	Townline	498-4875	Willowdale
Spinning Disk	447-9233	Toronto	Tradewinds	503-4388	Toronto
Split Infinity	222-9644	Willowdale	Trap Line	588-2964	Toronto
Stay-near Information	604-1221	Toronto	Tron	636-0808	Downsview
Stratus Systems	488-3358	Toronto	Tron BBS	481-9629	Toronto
Structures	778-4193	Toronto	Tropical Paradise	534-0823	Toronto
Super Continental	398-6720	Toronto	Tuesday at Six	222-6087	Willowdale
Super SONIC BBS	225-2872	Toronto	Two Doves	321-9711	Toronto
Swamp BBS	537-5635	Toronto	Tymnet	365-7630	Toronto
Sysop of the Pool	920-7665	Toronto	U.S.S. Intrepid	787-2582	Toronto
T.A.F. Online	235-0318	Toronto	U.S.S. Proxima	750-9141	Toronto
T.A.P.P.S.	741-2432	Toronto	Underground BBS	769-0692	Toronto
T.H.U.G.	755-8823	Toronto	University of Toronto 1	978-3959	Toronto
T.I. Tower	921-2731	Toronto	VIRTUAL REALITY SYSTEMS	600-0426	Toronto
THE "G" SPOT	739-8587	Toronto	WaterDeep	530-5532	Toronto
TIBM Wizard	743-6703	Rexdale	Westonia	241-9793	Weston
TVS BBS	222-4525	Willowdale	Westonia BBS 2	241-1981	Etobicoke
Techno Zone BBS	282-8634	Scarborough	Woburn BBS	396-4570	Scarborough
Ten Forward	234-0318	Etobicoke	Worth Every Byte	661-2573	Toronto
Terminator 2	485-3256	Toronto	Xanadu	291-5909	Scarborough
Terminator BBS	759-3757	Toronto	Xenomiga	921-6638	Toronto
Tex Chainsaw Massacre	449-6336	Toronto			
The A-Team	782-6435	Toronto			
The Adult BBS	286-6376	Scarborough			
The Basic Exchange	223-7598	North York			
The Beacon	481-6438	Toronto			
The Bread Board	503-9010	Toronto			
The Bytor BBS	746-5643	Etobicoke			

# ALBERTA, CANADA AREA 403 BULLETIN

Title	Phone	BPS	Title	Phone	BPS
Ace BBS	546-3031	16800	Lloyd's Fido	282-1703	2400
All-Twelve-Dangit	249-1920	2400	Logical Solutions	299-9900	14400
Altered State BBS	288-5359	2400	Lunatic Haven (Medicine Hat)	526-6957	14400
Amiga Online	254-1919	16800	MacLore	284-1059	14400
Amuc Express	282-5137	2400	MacRemote	249-1417	2400
Arsenal of Freedom (Red Deer)	346-1512	9600	Magic BBS	569-2882	2400
B&B Computing	238-3157	9600	Marantha! Ministries	274-9092	9600
Badger's Hole	286-6471	14400	Megabytes BBS (Didsbury)	335-3476	2400
BatCave File	230-3273	2400	Micro Express BBS (Red Deer)	346-7530	9600
BBS (The) Medicine Hat	527-8294	2400	Minerva - Employment info	233-7891	2400
Beach Party	293-9392	2400	Momentary Lapse	241-0045	2400
Belgarath	230-0607	2400	Native Waves	238-0449	9600
Body Bag	263-5581	14400	No Carrier BBS	293-6540	2400
Boolean Board	293-5129	14400	No Solutions	245-8982	9600
Boomers	249-5103	14400	Northern Link	246-4086	1200
Boonies Bar & Grill	935-4382	14400	Novare Data Systems BBS	246-6612	16800
Bottom Line (Blackfalds)	885-2035	2400	Nucleus Information Systems	531-9365	14400
Brainstormer's Idea	276-2454	9600	Ocular Malice	254-9992	9600
Bridge (The)	273-5415	14400	Online KCD	255-9638	2400
Buffalo BBS	279-7696	14400	Opportunity Network	241-8911	2400
Byte Bucket	247-9553	16800	Orion Project (The)(Wabasca)	891-2707	9600
Calgary Atarai Users	248-7099	14400	Other Side BBS (Red Deer)	346-5920	2400
Calgary - City of	221-3815	2400	PC Calgary	299-0461	9600
Calgary Commodore Users	235-1423	2400	Phantom's Lair (Red Deer)	346-1474	9600
Calgary Message Line	242-7527	2400	PMC Online	230-4171	14400
Calgary Programmers uplink	241-9722	14400	Pandora's Box	282-7616	14400
Calgary Spitfire	241-9650	14400	Penalty Box	242-5453	2400
Cameo Gateway	249-6008	16800	Personal's BBS	233-8653	2400
Canada West Foundation	265-2484	14400	Polish Pickle	259-5439	14400
Candle (The)	236-0154	14400	Praxis Scty K12(Medicine Hat)	529-1610	14400
Channel 23	288-4481	9600	Private Systems BBS	285-7167	19.2K
Chat Line	299-0180	2400	Pro Calgary	278-9146	2400
Compu-Farm BBS (Olds)	556-4100	9600	Q.U.I.T.	949-3015	2400
Computer Shop	243-2272	14400	Raenell's World	281-0640	2400
Connections	234-7169	14400	Rainbow Connection	244-0794	14400
Coop BBS	284-0033	14400	Recnet	932-7067	2400
Counter Current	541-0312	2400	Rat's Nest (Medicine Hat)	527-5256	9600
Cybertext	256-8808	14400	Realm's Of Doom	295-1175	14400
Dargaard Keep	547-0664	2400	Reflections (Three Hills)	443-5929	9600
Dawn Patrol	546-3977	14400	RJ'S Byteline	247-3180	9600
Daydreams at Nite	226-0533	14400	Rocky Mtn Renegade(Canmore)	678-6295	14400
Death Gate	278-8613	14400	Scrapbook	241-1238	2400
DLG HST (Red Deer)	347-3262	14400	Secret C	256-7019	9600
DLG V32 (Red Deer)	347-3269	14400	Siding 20	282-6519	14400
Double Vision Graphics	254-2395	14400	Simm-Ply Bored	248-1422	14400
ECS Net	253-5996	14400	Slide Rule	282-7940	14400
Elandrya	246-4674	14400	Soaring Eagle (Madden)	946-5098	2400
Excess	285-7338	16800	South Alta Telecom Link	273-7025	14400
Fikini	235-2416	14400	Squonkheous Zeta	273-7025	14400
Flash in the Pan BBS	225-2532	14400	Station BBS (Lethbridge)	382-3450	2400
Foothills Ham	283-1107	14400	Student Exchange	263-5261	16800
Fountain F/X	258-2549	14400	Super Space	246-6354	14400
Gorre & Daphetid	280-9900	14400	Surrounded by Cows	255-4212	9600
Green Party	289-4901	2400	T-8000	246-4487	14400
Gypsy	282-4459	9600	Telebyte Communications	289-8912	14400
Happily Married Wives	251-7620	9600	Technology Exchange (Olds)	556-2712	14400
Honeywell	221-2258	14400	Tech Talk	280-4938	14400
Hysteresis Loop	241-9853	2400	Time Traveller (Red Deer)	346-6382	9600
ICV Online (Red Deer)	342-1482	9600	Tir Nan Og BB	230-0934	9600
Image BBS	287-0983	2400	Total Recall	249-0699	9600
Imperium	251-9451	14400	Ultimate BBS	249-7916	9600
Inner City	547-0616	16800	Urban Express	285-6670	9600
Inner Sanctum (The)	248-7247	2400	VBBs	284-5625	14400
Interlink	238-5553	16800	Walk on Water	261-8063	1200
Intertech	230-4355	2400	Voice in the Wilderness	251-1464	14400
Ity Blty	285-7445	2400	We are not. Saints	246-8669	2400
Jazz Works Online	289-0097	9600	Western Can. Darkstar	276-2036	2400
host Jovian Astrology BBS	225-0346	2400	Western Can. Data (Stavely)	549-2284	9600
K12 Connection BBS	284-9149	14400	Western Wire	242-2112	2400
Kelly CADD BBS (The)	239-7602	14400	WinBBS	256-5744	9600
Keyboard BBS	246-6943	16800	World Systems	248-2183	9600
Late Night BBS	273-3503	19.2K	XXXperience	258-3095	2400
Little Dog on a Pillow	287-2258	14400			

## BOARDWATCH

### LIST OF BBS LIST KEEPERS

*This listing comprises a list of those who compile and maintain lists of bulletin boards, either by topical category, or by some geographic area or definition - often by area code. The primary bulletin board system where the list can be downloaded electronically is also included.*

BBSLIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Republic of South Africa	Henk WOlsink	Catalyst BBS	(041)34-1122
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Connecticut AC 203	Kevin Brook	Creative Edge BBS	(203)743-4044
Seattle AC 206/West Washington	Bob Dinsel/Nanook	Eskimo North	(206)367-3837
Tacoma Washington AC 206	Richard Langsford	AmoCat BBS	(206)566-1155
Autocad Related BBS	Jason Osgood	SAUG BBS	(206)644-7115
Kitsap County Washington	Michael Schuyler	Quicksilver BBS	(206)780-2011
Maine 207	Scott R. Bodeen	Street Corner BBS	(207)442-0997
Astronomy/Space BBS	John Pickens	Starbase III BBS	(209)432-2487
Central California AC 209	Jack Porter/Madera UG	Zen Den Systems	(209)675-8436
Graphical User Interface BBS	David Shapiro	The Gooey (GUI) BBS	(212)876-5885
96 List - 9600+bps BBS	Ken Sukimoto	Downtown BBS	(213)484-0260
Open Access UNIX Site List	Phil Eschallier	LGNP1 (login:BBS)	(215)348-9727
Pennsylvania AC 215/609/302	Ron Brandt	DSC/VOICENET	(215)443-9434
Cleveland Area 216	Jim Barry	Flip Flop	(216)951-9134
Champaign-Urbana IL AC 217	Eddie Thomson	The Dungeon BBS	(217)355-1214
Conservation/Nature BBS List	D.Wendling/JS Christianso	Coin of the Realm	(301)585-6697
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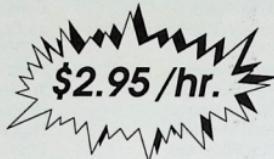
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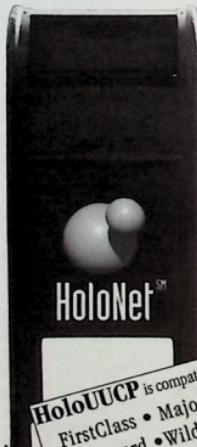
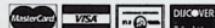
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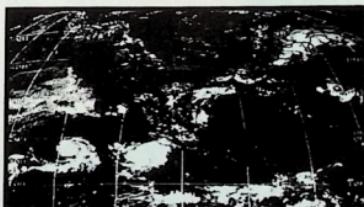
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**Pinecliffe BBS** (303)642-7463 Pinecliffe, Colorado since 01/82. Sysop: Craig Baker. Using Ultrabbs 2.09 with 18 lines on MS-DOS 80486 with 16000 MB storage. US Robotics at 14400 bps. No fees. Best BBS in The Rockies! 100kops 16 CDs. Games, UPI & Usenet. Help us grow! Public#642-0971 FREE 45min calls w/ \$30/hr gets 3HOURS/DAY! \$100 LIFETIME! HOMEBASE and HQ for Ultrabbs. Version 3.00 out by 11/10/93! Sysop also runs a store.

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**Sounds Of Silence** (615)449-5969 Nashville, Tennessee since 07/92. Sysop: Jim Walton. Using Major BBS 6.03 with 32 lines on MS-DOS 80486 with 15000 MB storage. Practical Peripheral at 14400 bps. \$15 Monthly fee. Great "Live" Chat and Entertainment System. Games, 17 Gigs of files, forums, classifieds. 24 hour access, dating surveys, E-Mail, WATTS lines, credit card and 900 billing. 32 high speed lines. Online fortune telling. An interesting system.

**12 GB, The Rose and Crown BBS** (615)892-0097 Chattanooga, Tennessee since 06/85. Sysop: David Ellison. Using PCBoard 15 with 6 lines on MS-DOS 80486 with 12000 MB storage. US Robotics at 14400 bps. \$330 Annual fee. Free 30 minutes per day with no ratios, no limits, 18 CDROMs on line. Theme Echomail. System is very fast. Over 130,000 files, over 12 Gigabytes. Download with first call.

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## NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - NOVEMBER 1988

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ADA 9X Project Bulletin Board	(800)925-9825	ADA Programming Language Revisions and News	Chris Anderson/Susan Carlson	Eglin AFB, FL
ADA Information Clearinghouse	(703)614-0215	Information on ADA Programming Language/Military Specs	Washington, D.C.	
Advanced Data Services Inc.	(301)685-9116	22 line PCBoard with 5.5 MB of Files	Frederick, MD	
Albuquerque ROS	(505)239-5974	36000 lines USA/Tel/Tradewars/Online Games	Albuquerque, NM	
American Cybernetics	(510)771-8825	BBS Devoted to Collecting and Distributing Computer Feedback	Ronkonkoma, NY	
ANARC BBS	(602)268-1082	Multi-Edit Product Support BBS	American Cybernetics	
ANARC BBS	(913)345-1978	World Radio-TV Handbook - Short Wave Freq Lists/Schedules	Tempe, AZ	
APCLUS - GlobalNet	(408)438-9367	Association of PC User Groups - Over 2000 USG officers	KS	
Applied Modeling Research RBBS	(919)541-1325	Environmental Association Agency/Almosphere Models	Scots Valley, CA	
Argus Computerized Exchange	(708)20-8344	William Peterson/PA	Hurdle Mills, NC	
AT&T Technical Support BBS	(617)425-2245	Kevin Behrens/Steve Williams/Doug Bell	Aurora, IL	
AT&T Support BBS	(717)747-4723	Pam Morrison	Lexington, MA	
ATC Support BBS	(908)769-5397	Support support system for AST Computer Products	Irvine, CA	
Atomic Cafe BBS	(419)55-4991	American Telephone/Telegraph PC Division	Plainfield, NJ	
Attention to Details	(617)630-8875	Support for AT&T Modems and Video Cards	Scarborough, Ontario	
Autodrive Network	(141)488-6222	Multi-Edit Product Support BBS	Houston, TX	
Beyond Eternity	(619)988-0452	Utilities ASH/Pariquet Utilities protocols	Mira Loma, CA	
BMUG BBS	(510)848-0552	Environmental Association Agency/Almosphere Models	Van Nuys, CA	
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BCS Into Center BBS	(617)630-0982	BB5 - Software for Internet Mail	Boston, MA	
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Beach Board BBS 1-371/1	(813)337-4950	Macintosh Topics - Frequently Asked Questions	Fort Myers, FL	
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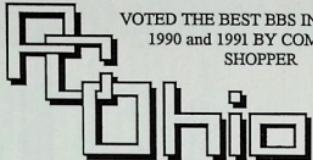
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## RIP support, not RIP service

Beauty—like our competition's RIP support—is only skin deep. They still display text in 20-line chunks. They make you press *Enter* to confirm choices. And make you tag items by typing line numbers.

And they can't create RIP screens. So you have to buy a paint program and spend hours drawing screens that match your menus.

Searchlight believes in doing things first, and getting them right. In 1987, we released the first BBS with a full-screen editor. In 1988, we added Lotus-style menus. In 1993, we were first with RIP support.

Our RIP support isn't tacked on—it's built in. We generate RIP screens on the fly. We give callers pick lists, scroll bars and dialog boxes.

Is there really a difference? Listen to Boardwatch editor Jack Rickard: "Searchlight has incorporated RIP technology to an amazingly integrated level with their BBS package... It looks hot."

## No fine print

Callers like the things Searchlight 3.5 does. Sysops like the things Searchlight won't do.

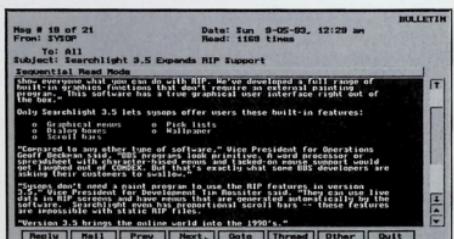
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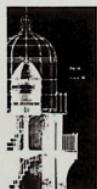


The lighthouse was an existing RIP screen. The RIP menu on it was automatically generated by Searchlight.



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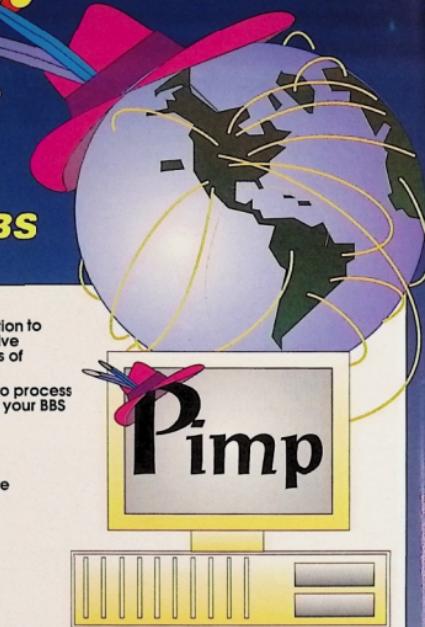
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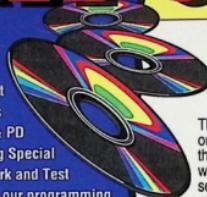
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